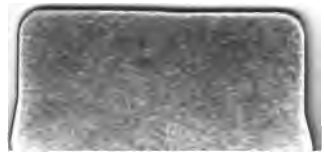

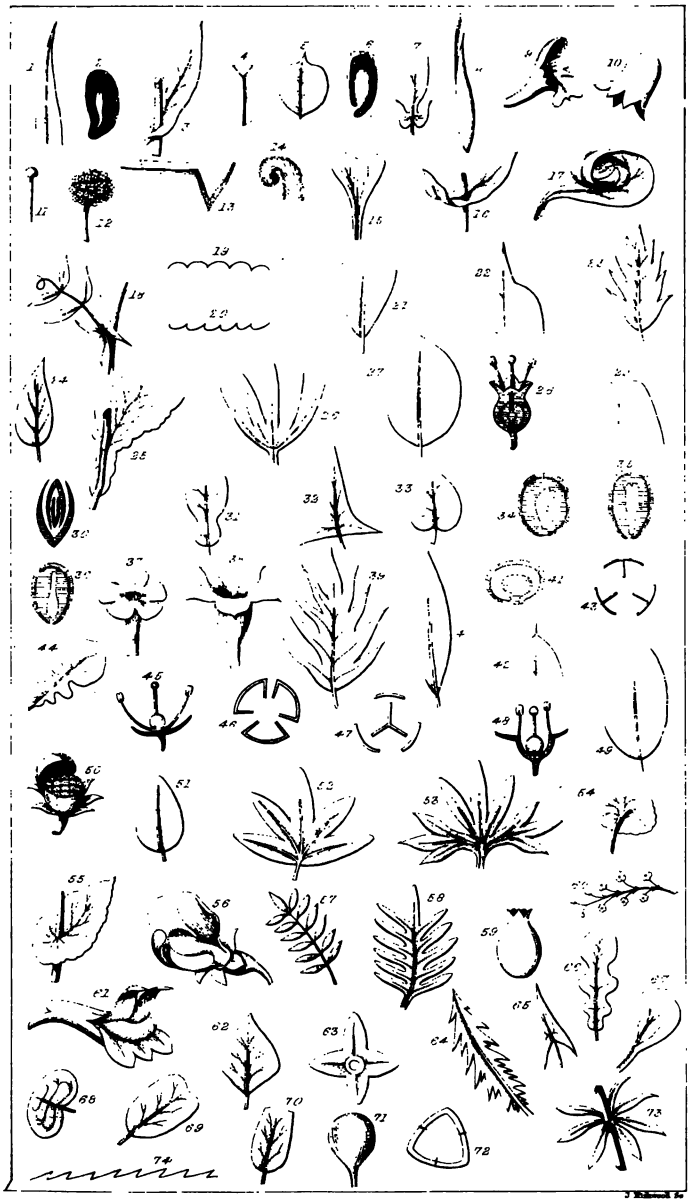

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A

HANDBOOK OF FIELD BOTANY,

COMPRISING

THE FLOWERING PLANTS AND FERNS

INDIGENOUS TO

THE BRITISH ISLES,

ARRANGED ACCORDING TO THE NATURAL SYSTEM.

THE ORDERS, GENERA, AND SPECIES

CAREFULLY ANALYZED, SO AS TO FACILITATE THEIR DISCRIMINATION;

WITH

A SYNOPTICAL TABLE OF THE GENERA

ACCORDING TO THE LINNÆAN CLASSIFICATION.

AND

A GLOSSARY OF THOSE TERMS MOST COMMONLY IN USE.

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INTRODUCTION.

In preparing the following pages for publication, I have been desirous to supply the student in botany with a guide to the floral productions of the British Isles, which, arranged according to the principles of the natural system, should embrace all that might be found necessary to enable him to identify species with ease and certainty.

The present advanced and advancing state of botanical science in these countries renders it unnecessary for me to defend the adoption of the system of natural orders, as the basis of a work like the present, in preference to that of Linnæus; the public voice has now decided this question; so that the advocate for the Linnæan system, in place of being an effective assailant, is now compelled to act on the defence.

The very simple and superficial nature of the inquiries necessary to be instituted in assigning to any plant its class and order in the system of the great Swede, is the chief, if not the only, reason that can be urged to justify the continued use of that arrangement. It must be borne in mind, however, that the investigation does not end with this; for in order to determine the genus of which the plant is a species in the heterogenous assemblage thus brought together, other and frequently most minute points of structure must be inquired into, surrounding this phase of the investigation with considerable difficulties. In the natural system these difficulties are merely transferred to the determination of the natural order; but this once accomplished, that of the genus is comparatively simple. So far, then, it is apparent that

the difficulties in the application of either system, to the determination of genera, are nearly balanced. If, however, we can simplify the investigation by which we can assign a plant to its natural order, then the only plea against the condemnation of that of Linnæus is removed, and we are justified in venerating it, merely as the beautiful structure of a past age, but which is altogether unsuited to the requirements of a more enlightened generation.

It is, however, by junior students that the difficulties which oppose the application of a Flora, to the practical pursuit of botany, constructed on a system so diffuse as that of Natural Orders are chiefly felt; and hence, in the endeavour to render that system available to young botanists, it is necessary not only to arrange the orders in a clear and judicious method, but to make that arrangement dependent not on those strictly essential characters which are frequently so minute, as to require the aid of the dissecting-knife and microscope to investigate, but on others more easily determined, yet of a less ordinal value. In the present work I have attempted to carry out these views, and have therefore given analytical tables of the orders, genera, and species, constructed on characters so practical, as, I have reason to believe, may lead even the most inexperienced to the identification of any plant. Many botanists, from early associations and long habit, prefer employing the Linnæan arrangement; for these an analysis of the genera according to that system is also prepared.

The method of using this book is, therefore, as follows: an unknown plant is submitted to examination; it is first tested by the characters given in the analytical table of the natural orders, in order to discover to which of them it belongs. That found, the student is to turn to the page indicated by the number affixed to the ordinal name; he there finds the order, with its description,—the essential or diagnostic characters, taken in connexion with the heading of the page, being printed in italics—and with which he finds the plant under examination to agree. That natural order embraces an assemblage of genera, arranged in a table similar to that of the natural orders; and by a like process, the genus to which the plant is referable, is determined, the accuracy of which may be verified by comparing it with the generic description immediately preceding the arrangement of the species. In a similar manner, the specific denomination is discovered, observing, however, that respecting the species their analyses and descriptions are incorporated. If in the course of

the examination, the meaning of a word is required, the student is referred to the glossary; and should the case need it, he may find the form illustrated by a figure in the frontispiece.

Having now obtained the specific and generic name of the plant, to which order, division, sub-class, and class the plant belongs, on looking at the symbols under the name of the species, he learns its duration, time of flowering, colour, in which of the three kingdoms alone the plant has been discovered, if it have not been found in all, or if it be exclusively a native of the Isles of Jersey, Guernsey, &c., as indicated by the letter C.; and finally, by the last figure on the right hand, whether it be a plant of rare or frequent occurrence. As this last-mentioned enumeration has been adopted, with slight modification, from the list of British plants of the Botanical Society of London, it is therefore better to give the following extract from their "Explanations" appended to the list:—

"Some ready rule for deciding upon the rarity or frequency of species has been long wanted. . . . The best test as yet given, is found in the number of local Floras, in which the several species are mentioned. Accordingly, a careful comparison has been made of the plants enumerated in twenty of the most complete local Floras, and the number of these Floras in which each species respectively occurs, will be found in the figures" which are placed farther to the right of the symbols under each specific name. "It will be easy to bear in mind, that the higher the number, the more common the plant, which the reverse obtains, respecting those species indicated by a lower figure. As a general rule, a variety is of less frequency than the typical form of the species."

A little consideration will serve to convince all of the utility of this indication, notwithstanding that such can only approximate the truth; and it must be remembered, that Ireland not having been included by the Society, in the preparation of these numbers, the enumeration respecting the rarity or frequency of species found therein, may, in some instances, be even less exact.

With reference to the arrangement of the orders adopted, it may not be unnecessary to offer a few remarks, as it differs from those Natural Systems more generally known as such; however, it must be apparent, that the present would not be a fit place or opportunity either to enter upon the discussion of the relative merits of any systematic arrangement of plants, or to state all the rea-

sons by which I have been influenced in preferring that now brought forward.

The idea has long occupied my mind, that the principles of vegetable transformation or morphology, might be made available in the formation of the higher divisions of flowering plants, in the same manner that the morphology of the simple cell may be used in the arrangement of the lower Cryptogamiæ. Botanists are now so familiar with the doctrine, hinted at by Linnæus, but more distinctly enunciated by Gœthe, of all parts of a flower being, in truth, nothing but modified leaves,—of the bracts, calycine divisions, petals, stamens, and pistils, being leaves altered in texture and form,—that it is not necessary here to enter more fully into this matter. To effect these metamorphoses, it is apparent that some special vital forces are called into action; and we are justified in the inference that those flowers which exhibit the most extensive departures from the original type, as the result of a more intense action of these forces, ought to be regarded as possessing a higher structural nature than those wherein the primitive model may be more evidently traced. It is manifest then, that the most simple metamorphosis the leaves undergo is in the production of flowers, all the parts of which most nearly resemble the former, in being distinct from one another; and that when these separate parts appear in a new condition, by their cohering more or less intimately with each other, a more complete alteration is effected. Therefore it is, I conceive, that flowers whose parts thus cohere, are to be considered as possessing a more exalted structure than those in which the several floral whorls and the members of each are distinct.

In the construction of a system for the arrangement of flowering plants according to these views, the following principle may be enunciated:—*That plants whose flowers exhibit their several parts in a state of separation, are to be placed in a lower position than those in which their several parts are in a state of cohesion;* and on this principle, the table of natural orders immediately preceding the descriptions is constructed.

In this the acknowledged division of plants into those with stamens and pistils, PHANEROGAMIÆ, and those without, CRYPTOGAMIÆ, is preserved, as well as the classes of EXOGENS or DICOTYLEDONS, and ENDOGENS or MONOCOTYLEDONS. The former of these classes has been separated into three sub-classes, the lowest in which either

the stamens or pistils are absent by abortion,—viz., the DICLINOUS sub-class, of which abortions of the different parts of the flower are the most obvious character; and the higher sub-classes, including those plants whose flowers are perfect, wherein the *Calyx* is free from the ovary or HYPOGYNOUS, and those in which these organs are in a state of union—the *Calyx* being PERIGYNOUS. With this sub-class the series commences.

But among Perigynous Exogens, we find some plants with flowers, having their corollas composed of *separate* petals,—APOPETALOUS or Polypetalous; or of these *united* to one another, SYNPETALOUS,—or Monopetalous. Of the latter, in conformity with the principle still kept in view, none appear entitled to hold so high a rank as those possessing composite flowers, the tendency to contract adhesions among the several parts of these being so strong, that not only are their flowers singularly modified thereby, but the peduncles of the separate florets being consolidated, unite to form that fleshy organ, which botanists have named the receptacle. The Apopetalous division embraces not only all those with flowers, in which the petals are disunited, but those in which they are altogether absent. The latter condition of the flower being so manifestly a degeneration of the former, that I conceive botanists are justified in combining them (the Polypetalous and Apetalous divisions of Jussieu) into one division, here named Apopetalous. Independently of other reasons for this, it will be seen that by thus grouping the orders in these divisions, a considerable advantage is effected; as for example, in that section of the Apopetalous Hypogynous Exogens, characterised by the presence of a large albumen in the seed, (from thirty-one to forty-one inclusive) orders are placed near to one another, having many characters in common, not the least remarkable of which is, the possession of an amphitropal embryo. The linear sequence of the orders will also be found exceedingly easy.

The Hypogynous sub-class is in like manner separated into the Synpetalous and Apopetalous Divisions.

Each of these sections of Exogens, Diclinous, Hypogynous, and Perigynous, I have submitted to a further sub-division, characterised by certain peculiarities in the structure of the ovary, depending on the comparative completeness of union, or distinctness of the carpels. In applying the principle of cohesion, with reference to the ovary, I found much difficulty; and it is feared, that a more perfect division

cannot in our present state of knowledge be attempted, than that given in the table; viz., one section in which the ovary consists of a single carpel, of several distinct ones, or these consolidated, but bearing the placentæ in their axis; and the other, having compound, 1-celled ovaries, in which the placentæ are parietal. It requires but a little consideration to perceive, that in this arrangement, the occasional occurrence of plants having consolidated ovaries with axile, but very rarely parietal placentæ, in orders whose tendency it is to produce them in a separate condition, or *vice versâ*, justifies the idea, of a natural grouping of such being attempted; those plants being removed, whose ovaries are 1-celled with parietal placentæ, and which have no tendency to exhibit their carpels in a state of separation. The importance of the character on which the next assemblage rests, the presence or absence of albumen in the seed, is so generally admitted by botanists of the present day, but advocated with peculiar force by Professor Lindley, that I feel it unnecessary to do more than refer to the various works of that author for an exposition of clear views on this subject.

With respect to Endogens, the only separation of this class which I conceive may, with propriety, be admitted, is into the Perigynous and Hypogynous sub-classes. The occurrence of diclinous flowers among these, is of too frequent occurrence in orders typically perfect to sanction the formation of a distinct division for their reception.

As to the class of Dictyogens proposed by Professor Lindley,—plants characterised by branching ribbed leaves, and a structure of the stem almost similar to that of an Endogen,—however valuable it may be in a general view of the vegetable kingdom, yet, there being but two examples of this class in our indigenous flora, and one of these, indeed, imperfect, I have considered it better to avoid the introduction of it here; and have, therefore, placed the respective orders in which these examples are found near to each other in the Perigynous and Hypogynous sub-classes of Endogens.

It may be mentioned in support of the claims of the proposed arrangement, to be considered natural, that examples occurring among the orders, exceptional to the characters of the class, sub-class, or division, wherein the order of which they are members is found, tend to the structure, characteristic of classes *below* them in the proposed series; whereas the cases are very few which exhibit

any tendency to develop a structure which, according to the proposed arrangement characterizes those of a higher rank. Thus, in the Diclinous sub-class, we have no example of flowers perfect and complete in all their parts, while the occurrence of diclinous plants in the Perigynous and Hypogynous sub-classes, is by no means uncommon. Again, among the Apopetalous, Hypogynous orders, cases are extremely rare of plants, rising into the Perigynous sub-class, or Synpetalous divisions; whereas, in these latter, examples of the Apopetalous corolla, or the superior ovary are comparatively frequent.

These considerations, thus briefly stated, induce me to believe, that the present arrangement is a near approach to the formation of a really natural classification, which, whatever be its imperfections, one obvious advantage, at least, it possesses, that of being formed upon a single, simple principle, intelligible and easy of application, equally by the youngest student, as well as the more advanced botanist.

In the names given to the natural orders, the terminations of some will be seen to differ from those most commonly in use. Agreeing with Dr. Lindley in the advantages of employing a systematic nomenclature, I have thought it better to preserve, in as many instances as possible, the older ordinal designation, and form the few which differ from them upon the same model. I have, therefore, employed -EÆ, as the termination of the orders, whence will be found, I conceive, to result a more harmonious assemblage of names, than by adopting -ACEÆ, proposed by Dr. Lindley. I have used -INÆ, as the termination of the Sub-orders, and -IDÆ, that of the Tribes.

It now remains for me to express the deep sense of obligation I feel towards those friends whose valuable assistance has enabled me not only to complete, but to enrich this work.

And first, my best thanks are due to JOHN BARKER, ESQ., M. D. for his admirable analysis and arrangement of the Ferns, which will be found greatly to simplify the study of this interesting order of plants.

For the able description and arrangement of the Salices, I am indebted to the REV. J. E. LEEFE, of Bishop-Wearmouth, Sunderland, the well-known author of the Salictum Britannicum. A principal feature in this arrangement, is the considerable reduction which has been effected in the number of species, whereby the study of this much

neglected genus is rendered far less embarrassing to the young botanist, and more likely to lead him to its successful prosecution.

The name of Edwin Lees, Esq., of Henwick, Worcester, has been long known as an ardent investigator of the perplexing genus Rubus. From this botanist I have received the valuable contribution on the British Rubi, which appears in the following pages. Therein will be found described some recently-discovered species, thus rendering the present a most complete enumeration of the indigenous species of this genus.

For the rest of the work—with all its imperfections and errors—the responsibility rests on me alone. These I have endeavoured to render as few as possible, having diligently examined all the works of merit on this subject, that are known to botanists as such. In the nomenclature I have, with few exceptions, followed the Catalogue of the Botanical Society of London; omitting some fifty or more species which, for many reasons, ought no longer be permitted to encumber our lists of indigenous plants. In deviating in some few instances from that list, I have done so for reasons unnecessary to state here, but which appeared to me sufficient to warrant the course adopted. One material departure from established custom, however, requires notice; that is, in removing the stipulous sections of the genera Arenaria and Spergula, from the Caryophylleæ, to the Illecebreæ. The only constant difference existing between these orders, being in the presence or absence of stipules, justifies me in this separation. But I should have hesitated in making this change, were it not that I have had the decided opinion of Dr. Lindley expressed in its favour. It seems to me, however, that a better course would be to incorporate these orders, than to continue their separation on so trifling a character as the presence or absence of stipules. In the descriptions, the British Flora of Sir William J. Hooker has been taken as the text. I have also largely consulted Smith's English Flora, Lindley's Synopsis, and Mr. Babington's British Botany, to which work I am chiefly indebted for the initial letters, by which the country alone wherein the plant has been discovered, is indicated. Sowerby's British Botany has been much used, and also Reichenbach's Icones Plantarum. De Candolles Prodromus, and his Botanicon Gallicum have been extensively consulted, as well as the admirable Flora of Shropshire, by the Rev. Mr. Leighton, and the excellent Flora Hibernica of Mr.

Mackay. To the works of Dr. Parnell on the Gramineæ, I am much indebted for the assistance which has enabled me to complete the description and arrangement of that difficult order. In the preparation of the characters of the natural orders, Lindley's noble work, "The Vegetable Kingdom," has been mainly used.

Notwithstanding the assistance derived from such eminent sources, I feel it would be presumptuous in me to suppose, that errors may not be discovered throughout the work. But it shall be my most anxious endeavour, should the work reach a future edition, to render it as perfect and as safe a guide as it is capable of being made.

Lastly, the author wishes it to be understood that the present work, being prepared merely to facilitate the labours of the young exploring botanist, is not to be considered as an attempt to satisfy or remove the doubts of the more experienced. For this purpose, other and more extended works must be consulted; but which, either on account of their inconvenient size are unsuitable as field companions, or from their method of arrangement, cannot but be regarded as sealed books to the great majority of junior students.

W. E. S.

DUBLIN, July 1st, 1847.

CORRIGENDA.

Page xx, line 29, insert "or obsolete."
„ xx, „ 30, for "4," read "5."
„ 19, *Senecio aquaticus*, *paludosus*, *Sarracenicus* ought to be numbered 7, 8, 9, instead of 6, 7, 8.
„ 41, line 5 from bottom, insert "ov. 1-celled."
„ 41, „ 2 from bottom, insert "ov. 2-celled."
„ 46. „ 26, for "*pólita*," read "*polita*."
„ 63, the last four lines of the analytical table ought to stand thus :—

Pod falcate or spiral. ..	..	18. MEDICAGO.
Pod straight.		
Fl's minute, reddish.	..	17. TRIGONELLA.
Fl's large, yellow. ..	..	19. LOTUS.

„ 96, line 28, for "*pantóthix*, read, "*pántothix*."
„ 99, „ after "GLAUCIUM," insert the generic character :—
"Stigmas 2 sessile. caps. elongated, 2-valved , placentæ connected by a spongy dissepiment."
„ 102, „ 7, for "Alwich," read "Alnwich."
„ 102, „ 13, for "*siliquæ*," read "*siliqua*."
„ 112, „ 22, for "Pet. 6," read "Pet. 5. Stam. 6."
„ 135, „ 2 from bottom, for "*versicólor*," read "*versícolor*."
„ 155, „ 19 from bottom, for "Kock," read "Koch."
„ 161, „ 4, for "*sempervivens*," read "*sempervirens*."
„ 179, „ 9, for "on" read "or."
„ 179, „ 22 from bottom, for "and nearly so," read "and sessile or nearly so."
„ 208, last line, for "*serratum*," read "*serratus*."
„ 212, line 4, for "*hyporboréa*," read "*hyperbórea*."

GLOSSARY.

The numbers refer to the figures in the Frontispiece.

Acerose, stiff, slender, sharp-pointed.
Acicular, needle-shaped.
Aculeate, furnished with prickles.
Ab-, in combination, signifies out of.
Acrogen, a plant growing at its end only, not increasing in diameter.—v. *page* 209.
Acuminate, taper-pointed, but flat (1).
Adnate, adhering to the face of anything; as when the anther is attached to the filament by its whole length.
Adpressed = *Appressed*.
Akenium, a hard, indehiscent, simple fruit, containing a loose seed.
Albumen, a substance found in certain seeds, generally surrounding the embryo (2, 34, 35, 36).
Alveolate, resembling a honey-comb.
Amentum or *Catkin*, a spike of flowers destitute of calyx or corolla, and the whole falling off in a single piece.
Amphitropal, curved round the body to which it belongs (41).
Amplexicaul, clasping the stem; when the base of the leaf surrounds the stem (3).
Angular, furnished with angles (4).
Annuals, plants which grow, perfect their seed, and die in one year.
Apetalous, without petals.
Apiculate, terminating abruptly in a little point 5).
Apocarpous, an ovary in which the carpels are distinct from each other.
Apopetalous, a corolla formed of distinct petals.
Appressed, lying close against the body to which it is attached.
Apterous, without wings.
Arachnoid, covered with loose, white, entangled, thin hairs, resembling a spider's web, or unspun cotton.
Arborous, as a tree.
Areolate, divided into a number of little spaces.
Arillus, a process of the placenta, adhering to, and often surrounding the seed.
Aristate, furnished with an awn.
Articulation, the place where one body is jointed to another.
Ascending, having a direction upwards, with an oblique base (6).
Attenuate, gradually narrowing in breadth.
Auricled, eared; having two small, rounded lobes at base (7).
Awn, the mid-rib elongated into a bristle, which quits the lamina a little below the apex (8).
Axilla, the angle formed by the union of the leaf and stem.
Axile, placed in the axis of anything.
Axis, the line that passes through the centre of anything.

Baccate, like a berry.
Bearded, furnished with a long tuft of hairs.
Berry, a 1-or more-celled, inferior, pulpy compound fruit, the seeds scattered through the pulp.
Bicuspidate, furnished with 2 points.
Biennial, a plant requiring two seasons to mature its seeds, and then dying.
Bifarious, placed in two rows.
Bifid, divided into two segments.
Bilabiate, a calyx or corolla, separated into two unequal divisions, an upper and lower (9).
Binate, two leaflets growing from the same point.
Bi-pinnate, pinnate leaves with pinnate leaflets.
Bi-pinnatifid, pinnatifid leaves with pinnatifid segments.
Bi-ternate, each division of a ternate leaf being binate.
Bracts, small bodies which are placed on the peduncles, nearest to the calyx.
Bristles, rigid hairs.
Bulbs, underground buds, consisting of numerous imbricated, fleshy scales.

Caducous, falling off soon.
Cæsious, grey.
Cæspitose, growing in little tufts.
Calcarate, spurred.
Campanulate, bell-shaped, a calyx, corolla, or other organ in which the tube is inflated and enlarged into the limb from a rounded base (10).

Canaliculate, channelled or furrowed.
Canescent, hoary.
Capillary, very slender.
Capitate, growing in a head; when a terate body ends abruptly in an enlarged, globose summit (11, 12).
Capsule, a 1 or more-celled, many-seeded, superior, dry, compound fruit, dehiscing by valves or pores.
Carinate, keeled, with a sharp, projecting ridge, arising from a more or less prominent rib (13).
Cariopsis, a 1-celled, 1-seeded, dry and indehiscent fruit, formed of 2 or more carpels, with the pericarp and seed inseparably united.
Carpels, the elementary portions of which the ovary is formed.
Catkin = *Amentum*.
Caudate, tailed.
Cauline, of the stem.
Cernuous = *drooping*.
Chalaza, that part in a seed where the vessels of the raphe pass from the exterior integument, and expand into the inner one.
Ciliated, edged with hairs like an eye-lash.
Cinereous, ashy-gray.
Circinate, rolled inwards like the head of a crozier (14).
Cirrhi, tendrils (18).
Clavate, club-shaped, gradually thickening upwards from a very tapering base.
Claw, the narrow, tapering base of petals (15).
Coarctate, contracted, drawn close together.
Cobwebbed = *Arachnoid*.
Cochleate, like the shell of a snail.
Concrete, hardened, or formed into one mass.
Conduplicate, when a body is doubled so that the two sides are parallel.
Cone or *Strobilus*, a collective fruit, formed from an amentum, the carpels of which are open, in which lie the seeds exposed.
Conjugate, joined in pairs.
Connate, when the bases of two opposite leaves are united (16).
Connivent, *converging*, approaching together.
Convolute, rolled together upwards.
Cordate, shaped like a heart on cards, that is, with 2 rounded lobes at base (33).
Cormus, a solid, roundish, underground stem.
Coriaceous, leathery.
Cornute, terminating in a process resembling a horn.
Coryliform, cordate and bulging beyond its centre or middle, like a hazel-leaf, somewhat suddenly cuspidate.
Corymb, a raceme or panicle, the lower pedicels long, bearing the flowers on a level with the interior shorter ones.
Crenate, the margin notched with rounded teeth (19).
Crescent-shaped or *lunate*, like the figure of the new moon.
Crisped, curled; when the margin is excessively irregular, divided, and twisted.
Cruciate, shaped like a Maltese cross.
Cucullate, shaped like a hood or cowl.
Culm, the stalk of grasses.
Cuneate, *wedge-shaped*, inversely triangular (21).
Cupule, a cup-shaped involucrum, in which the fruit of the oak and other amentiferous trees is seated.
Cuspidate, tapering gradually into a rigid point (22).
Cuticle, the outer skin or epidermis.
Cut, regularly divided by deep incisions (23).
Cylindrical, terate, of the same diameter throughout.
Cyme, a mode of inflorescence, in which the branches of a divided panicle are short and level-topped, the central flowers opening before those of the circumference.

Decandrous, having ten stamens.
Deciduous, falling off.
Declinate, curving downwards.
Decompound, as when a leaf is doubly pinnate, or a panicle, the branches of which are also panicled.
Decumbent, lying upon the earth, but rising at the apex.
Decurrent, prolonged downwards beyond the point of insertion (25).
Deflexed, bent downwards.
Dehiscent, opening.
Deliquescent, branching, so that the principal axis or branch cannot be traced in the subdivisions.
Deltoid, shaped like the Greek Δ.
Demersed = *Submersed*.
Dentate, the margin divided into sharp teeth, with concave edges (20).
Denticulate, finely toothed.
Dependant, hanging straight down.
Depressed, flattened from above.
Descending, having a direction gradually downwards.
Diadelphous, when the filaments are united into 2 sets.
Diandrous, a flower with 2 stamens.
Dichotomous, forked, branching in pairs.
Didynamous, a flower with 2 long and 2 short stamens.
Didymous, twin, divided into 2 equal parts.
Diffuse, spreading widely.
Digitate, fingered, divided nearly to the base into 5 narrow lobes (26).
Diœcious, fl's which bear stamens only on one plant, and pistils only on another.
Discoid, when in compound flowers all the florets are tubular.
Disk, the fleshy, annular process which surrounds the ovary; also, the centre part of compound flowers, which consists of tubular florets.
Dissepiments, the partitions by which a seed vessel is divided internally, formed of the walls of two contiguous carpels.
Distichous, arranged in two opposite rows.
Divaricate, growing in a straggling manner.
Diverging, parting at an acute angle.
Dodecandrous, having 12 stamens.
Dolabriform, axe-shaped.

Dorsal, fixed on the back of anything.
Downy, *pubescent*, covered with very short, weak, dense hairs.
Drooping, *cernuous*, inclining to one side, so that the apex is directed to the horizon.
Duplicate, doubled, in twins.
Drupe, a superior, simple fruit, the pericarp fleshy, and the endocarp hard and stony.

Eared = *Auricled*.
Elliptic, oval, having the mathematical figure of an ellipse, but with acute ends (27).
Emarginate, having a notch at the end as if a piece were cut out (29).
Endogenous, see page 164.
Epigynous, placed upon the ovary; as the stam. in fig. 28.
Epidermis, the outer skin of the bark.
Epiphytes, plants growing upon other plants, from which, however, they obtain no sustenance.
Equitant, when in æstivation, the sides of the separate parts overlap each other completely, and in a parallel manner (30).
Erose or *Eroded*, when the margin is irregularly denticulated, as if gnawed.
Even, the reverse of inequality of surface.
Exogenous—v. *page* 5.
Exserted, when one organ projects out of and beyond another body.
Extrorse, turned away from the axis to which it belongs.

Falcate, plane and curved like a reaper's sickle.
Fascicled, arranged in parcels or bundles.
Fastigiate, when all the parts are nearly parallel, each pointing upwards to the sky, and forming a pyramid.
Fibrous, composed of fibres.
Fiddle-shaped, *panduriform*, obovate, with a deep sinus at each side (31).
Filiform, slender, like a thread, not thicker in one part than in another.
Fimbriate, fringed, with long, thickish, filiform processes.
Fingered = *Digitate*.
Fistular, hollow like a tube.
Flexuose, bent in an undulating manner.
Forked = *Dichotomous*.
Flosculous, compound flowers consisting of all tubular florets.
Foliaceous, of the form of leaves.
Follicle, a 1-celled, 1 or more-seeded, simple fruit, opening by the ventral suture, and bearing the seeds on the margins of the suture.
Frutescent or *Fruticose*, shrubby.
Fugaceous, falling off or perishing very soon.
Funicle, the stalk by which the seed is attached to the placenta.
Fusiform, spindle-shaped, thick, tapering at each end.

Galeate, helmet-shaped, like the upper lip of a ringent or labiate corolla.
Gemmæ, leaf-buds.
Geniculatus, kneed, bend abruptly as a knee.
Gibbous, convex or protuberant.
Glabrous, smooth.
Glaucous, sea-green, or having a hoary, bluish appearance.
Globose, spherical, or nearly so.
Glume, the outer of the floral envelopes of grasses.
Grooved, furrowed, channelled.
Gynandrous, with the stamens and pistils combined into a column.
Gyrate = *Circinate*.

Habit, general appearance of a plant.
Hair-pointed, *piliferous*, terminating abruptly in a little point.
Hairy, *pilose*, covered with short, weak, thin hairs.
Hastate, halbert-shaped, abruptly enlarged at the base into two acute, diverging lobes (32).
Heart-shaped = *Cordate*.
Herbaceous, of a thin, green, and cellular texture.
Hermaphrodite, having both stamens and pistils in the same flower.
Heterotropal, when the embryo lies across the hilum,
Hexandrous, having 6 stamens.
Hilum, or scar by which the seed is attached either to the funicle or placenta.
Hirsute, *shaggy*, covered with long, weak hairs.
Hispid, covered with long, rigid hairs.
Hoary, *incanus*, covered with very short, dense hairs, so as to give a white appearance to the surface.
Homotropal, an embryo, having the same direction as the seed, but not straight (34).
Honey-combed, alveolate.
Horned = *Cornute*.
Hypocrateriform, salver-shaped, a corolla with a slender tube, and a flat limb (36).
Hypogynous, inserted beneath the ovary (45).

Icosandrous, 12 to 20 perigynous stamens.
Imbricate, lying over each other like the tiles of a house.
Incanus = *Hoary*.
Incised = *Cut*.
Included, as when the stamens are enclosed in the tube of the corolla.
Indehiscent, not opening.
Inferior, (Calyx) inserted below the ovary.
Inflated, bladdery, thin, swelling equally as if inflated with air.
Inflexed, suddenly bent inwards.
Inflorescence, the mode in which flowers are arranged upon the stalk.
Infundibuliform, funnel-shaped; tube obconical, with an enlarged limb (38).
Innate, adhering to the apex of anything.
Internodes, the space between the joint of a stem.
Introrse, turned towards the axis.
Involute, rolled up with.
Irregular, in which the parts of an organ are unsymmetrical (9).

Jointed = *Articulated.*

Keeled = *Carinate.*
Kneed = *Geniculate.*

Labellum, lip; the large mostly deformed petal of orchidaceous flowers.
Labiate = *Bilabiate.*
Laciniate, divided by deep, taper-pointed incisions (39).
Lanceolate, narrowly elliptical, tapering to each end (40).
Leaflets, the leaf-like members of a compound leaf.
Lenticular, lens-shaped.
Liber, the inner bark.
Ligulate, strap-shaped.
Linear, narrow, with the two opposite margins parallel.
Lipped = *Bilabiate.*
Lip = *Labellum.*
Lobed, partly divided into a determinate number of segments.
Loculicidal, dehiscence, when the valves bear the dissepiments in their axis (43).
Lomentum, a legume which is jointed transversely, and falls to pieces when ripe.
Lunate, crescent-shaped.
Lucid, with a bright and shining surface.
Lyrate, with one large, terminal lobe, and several smaller ones, diminishing in size to the base (44).

Medulla, the pith.
Medullary rays, the lines in an exogenous stem, which are seen radiating from the pith to the bark.
Monadelphous, having the filaments cohering in a tube.
Monandrous, with one stamen.
Monocarpus, an ovary which is composed of but one carpel.
Moniliform, contracted at regular intervals like a string of beads.
Monopetalous = *Synpetalous.*
Monosepalous = *Synsepalous.*
Mucronate, abruptly terminated by a hard, short point (42).
Muricated, covered with numerous short, hard points.

Naked, glabrous.
Napiform, turnip-shaped.
Navicular, boat-shaped.
Necklace-shaped = *Moniliform.*
Needle-shaped = *Acerose.*
Neuter, neither furnished with stamens nor pistils.
Nodding, inclining from the perpendicular, so that the apex is directed downwards.
Nodes, joints or knots.
Nodose, having many nodes.
Nucleus, the kernel.

Ob., in composition, indicates that the thing signified is inverted, as obcordate, inversely cordate; obovate, inversely ovate, &c.
Oblique, in outline, when there is a slight inequality in the two sides of anything (24).
———, in direction, when the margin points vertically, the apex horizontally.
Oblong, rather longer than elliptical, obtuse at each end (49).
Obtuse, terminating gradually in a rounded end (49).
Octandrous, with 8 stamens.
Opaque, dull, the opposite of shining,
Opercular, covered with a lid (50).
Orbicular, a plane surface circumscribed by a circle.
Orthotropal, straight, and having the same direction as the body to which it belongs (34).
Ovary, that part of the flower in which the seeds are contained.
Oval = *Elliptical.*
Ovate, egg-shaped, oblong, or elliptical, broadest at the lowest end (51).
Ovules, the unimpregnated seeds which are contained in the ovary.

Palmate, divided into 5 lobes, about half way down (52).
Panduriform = *Fiddle-shaped.*
Panicle, a raceme, the branches of which bear clusters of flowers instead of single ones.
Papilionaceous, butterfly-shaped; an irregular apopetalous corolla, of which the uppermost petal is called the *vexillum* or *standard*, the two lateral ones the *alæ* or *wings*, and the two inferior ones, which are often combined, the *carina* or *keel* (56).
Parenchyma, those parts of plants which consist of lax, cellular tissue only.
Parietal, arising from the inner lining of an organ.
Parted, divided nearly to the base in a determinate number of segments.
Patent, spreading.
Pectinate, the same as pinnatifid, with very numerous close and narrow segments, like the teeth of a comb (58).
Pedate, a palmate leaf, with the 2 lateral lobes themselves divided into smaller segments (53).
Pedicels, small footstalks of flowers.
Peduncle, the common footstalk of flowers.
Peltate, when the petiole is attached to the disk, instead of the margin (54).
Pendulous, hanging downwards from weakness of the stalk.
Perennial, lasting for several years.
Perfoliate, when the two basal lobes of an amplexicaul leaf are united together, so that the stem appears to pass through the substance of the leaf (55).
Perianth, in Endogens; the envelope surrounding the flower, in which the calyx cannot be distinguished from the corolla,
Pericarp, the seed vessel.
Perigynous, as the stamens or corolla, when they are inserted on the calyx, the latter

being free, or partially adherent to the ovary (48).

Perigynous, the calyx is perigynous, when it surrounds, and is adherent to the ovary (28).

Persistent, not falling off.

Personate, a labiate corolla, with the lips closed (61).

Petals, the second whorl of floral envelopes.

Petaloid, like a petal in texture.

Petiole, the footstalk of leaves.

Phanerogamous—v. *page* 6.

Phænogamous, having the stamens and pistils obvious.

Phylloid, leaf-like.

Pilose, covered with short, weak, thin hairs, or hair-like in contradistinction to feathery.

Pinnate, when simple leaflets are arranged along the sides of a common petiole (57).

Pinnatifid, divided into lateral segments almost to the mid-rib.

Pitcher-shaped, campanulate, with a contracted orifice (59).

Plaited, folded lengthwise, like a fan when half closed.

Plane, when the surface is level or flat.

Plicate = *Plaited*.

Plumose = *Feathery*.

Plumule, the young leaves in the embryo.

Polygamous, plants in which some flowers are pistilliferous, some staminiferous, and some perfect or hermaphrodite.

Polypetalous = *Sympetalous*.

Pome, a 2 or more-celled, few-seeded, inferior, indehiscent, fleshy fruit; the cells dry, with a cartilaginous or bony lining.

Premorse, truncate, but with a jagged termination (70).

Prickles, sharp, rigid processes of the epidermis, falling off when old.

Procumbent, spreading over the surface of the ground.

Proliferous, bearing numerous branches from some particular point.

Prostrate, lying flat.

Pruinose, frosted, or covered with a fine bloom like a plum.

Pubescent, downy.

Pyriform, pear-shaped.

Pyxidium, a 1-celled capsule, dehiscing by a transverse incision (50).

Quinate, five growing from the same point.

Raceme, a rachis with stalked flowers (60).

Rachis, the mid-rib of the frond of Ferns.

Rachis, the central stalk in some kinds of inflorescence, on which the flowers are arranged.

Radiant, when in a head of flowers the outer ones spread like a ray.

Radical, proceeding from the root.

Radicle, the portion of the embryo opposite to the plumule.

Raphé, the vascular channel of communication in inverted seeds, between the chalaza and hilum.

Receptacle, that part in compound flowers on which the florets are placed.

Recurved, bent back.

Regular, in which all the parts of a calyx or corolla, &c., are symmetrical.

Reniform, *kidney-shaped*, crescent-shaped, with rounded ends (68).

Repand, with a slightly uneven, and undulating margin.

Resupinate, inverted by a twisting of the stalk.

Reticulated, netted.

Retrorse, turned backwards.

Retuse, obtuse, depressed in the centre (69.)

Revolute, rolled back.

Rhomboid, oval, somewhat angular in the middle (62).

Ringent, gaping.

Rotate, wheel-shaped, a synpetalous corolla, with a flat limb, and a very short tube (63).

Rugose, rough, or coarsely wrinkled.

Runcinate, a leaf in which the segments point backwards (64).

Saccate, with a bag or pouch.

Sagittate, shaped like the head of an arrow (65).

Salver-shaped = *Hypocrateriform*.

Samara, a 2 or more-celled, superior fruit, the cells few-seeded, expanded into wings.

Scabrous, rough, with little asperities.

Scape, a stem arising from the root, bearing nothing but flowers.

Scarious, membranous and dry.

Secund = *Unilateral*.

Septicidal, dehiscing through the septa (46).

Septifragal, dehiscing by the separation of the valves from the dissepiments (47).

Sepals, the separate parts of the calyx.

Serrated, cut like the teeth of a saw (74).

Sessile, seated upon anything without a footstalk.

Setæ, bristles.

Shaggy=*Hirsute*.

Silicula, a short, dry, few-seeded fruit, formed by the union of two carpels, and spuriously 2-celled by an expansion of the placenta.

Siliqua, differs from the last only in being long.

Sinuate, having the margin alternately with deep concavities and convexities (66).

Spadix, when the flowers are closely arranged, without bracts, around a fleshy rachis.

Spathulate, oblong, with the lower end very much attenuated (67).

Spike, flowers sessile, on a long rachis.

Spines or thorns, sharp, woody processes proceeding from the stem.

Spur, a long process, proceeding from the flower.

Stellate, formed like a star.

Stipes, the petiole of the frond of Ferns.

Stipitate=*Stalked*.

Stipules, appendages at the base of the petiole of certain leaves (18).

Stoloniferous, having creeping scions.

Strobilus, a cone.

Suffruticose, shrubby in a slight degree.

Superior (Calyx), when the limb of the calyx surmounts the ovary.

Tendrils, the twining organs by which some plants lay hold of others (18).

Tapering, gradually narrowing.
Terate, taper, round and long.
Testa, the covering of the seed.
Tetradynamous, 4 long, and 2 short stamens.
Tomentose, covered with very short, rigid hairs.
Toothed = *Dentate*.
Torulose, knotted, a cylindrical body, with irregular enlargements at intervals.
Trichotomous, branching in threes.
Truncate, terminating very abruptly as if cut off (70).
Tubers, fleshy bodies attached to underground stems.
Turbinate, inversely conical, shaped like a top (71).
Turgid, swollen.

Umbel, when the pedicels all proceed from a single point. When each pedicel bears a single flower it is *simple*; when each pedicel bears a second umbel, it is compound.
Uncinate, hooked.
Unguiculate, furnished with a short claw.
Unilateral, arranged on one side of anything.
Urceolate = *Pitcher-shaped* (59).
Utricle, a 1-celled, 1 or few-seeded, simple, membranous fruit.

Valves, the pieces into which the fruit separates.
Valvate, applied to each other by the margins only (72).
Versatile, swinging lightly on a stalk, to which it is attached by the middle.
Verticillate = *Whorled*.
Vexillum, see *Papilionaceous*.
Villous, shaggy.
Viscid, adhesive, clammy.
Viviparous, bearing young plants in place of seeds or flowers.

Wavy, having the surface towards the margin alternately depressed and elevated.
Waxy, of the texture and colour of wax.
Wedge-shaped = *Cuneate*.
Wheel-shaped = *Rotate*.
Whorled, when several bodies are in opposition round a common axis (73).
Winged, having a thin, broad margin.
Woolly, covered with long, dense, matted, curled hairs.

ARTIFICIAL ANALYSIS

OF THE

NATURAL ORDERS WHICH COMPRISE BRITISH SPECIES.

FLOWERING PLANTS.

* *Trees or shrubs with distinct bark, wood, and pith; or herbs. Leaves branch-ribbed. Fl's seldom 3 or 6-nary, never arranged on a spadix, nor enveloped by a spathe.*	
† *Fl's with both stam. and pistil.*	
‡ *Ov. inferior.*	
Cor. of one piece (Synpetalous). .	DIVISION I.
Cor. of 2 or more distinct pet., or 0 (Apopetalous). . . .	DIVISION II.
‡ *Ov. superior.*	
Cor. apopetalous. . . .	DIVISION III.
Cor. synpetalous. . . .	DIVISION IV.
† *Fl's some with stam. alone, some with pistils alone.*	DIVISION V.
* *Never trees, rarely shrubs, but not having distinct bark, wood, or pith. Leaves straight-ribbed. Fl's 3 or 6-nary, sometimes arranged on a spadix, naked or enveloped in a spathe.*	
Ov. inferior.	DIVISION VI.
Ov. superior.	DIVISION VII.

FLOWERLESS PLANTS.

Furnished with leaves.	DIVISION VIII.

Division I.

* Leaves whorled. . . . . Galieæ, 27.
* Leaves not whorled.
  † Stam. 1-3. . . . . Valerianeæ, 23.
  † Stam. 4-10.
    ‡ Ov. 1-celled.
      § Fl's in dense heads, surrounded by a many-leaved invol. Seed 1.
        Anth. distinct. . . . . Dipsaceæ, 22.
        Anth. united. . . . . Asteræ, 6.
      § Fl's if in heads, not surrounded by an invol.
        Seeds 4. Leaves compound. . . Araliæ, 39.
        Seeds numerous. Leaves simple. . . Primuleæ, 122.
    ‡ Ov. 3-5-celled.
      Stam. 5,
        inserted on cor. . . . Lonicereæ, 26.
        not inserted on cor. . . . Campanuleæ, 24.
      Stam. 8-10. . . . . Ericeæ, 117.

Division II.

* Cor. 0.
  Stam. 1. . . . . Halorageæ, 43.
  Stam. 4. . . . . Onagreæ, 41.
  Stam. 5. . . . . Santalineæ, 40.
  Stam. 6-12. . . . . Aristolochiæ, 41.
* Pet. present.
  † Cal. 2-4-cleft.
    Stam. 2 or 8. . . . . Onagreæ, 41.
    Stam. 4. . . . . Corneæ, 40.
  † Cal. 5-cleft.
    ‡ Stam. 4.
      § Fl's in umbels.
        Seeds 2. . . . . Angelicæ. 29.
        Seeds more than 2. . . . Araliæ, 39.
      § Fl's solitary, or in racemes. Seeds numerous. . Grossulariæ, 29.
    ‡ Stam. more than 5.
      Trees. . . . . Roseæ, 48.
      Herbs. . . . Saxifrageæ, 46.

Division III.

* Pet. larger than sep.
  † Stam. definite, not more than 12.
    ‡ Carpels distinct, at least in their upper portion; or single, 1-celled, *i. e.* the placenta not being central, the style and stigma undivided.
      § Cor. regular.
        ‖ Sep., pet., and stam. opposite. . . Berberideæ, 93.
        ‖ Sep., pet., and stam. alternate.
          ¶ Carpels free to the base.
            Plants succulent; leaves simple. . Crassuleæ, 43.
            Plants not juicy; leaves compound. Roseæ, 48.
          ¶ Carpels combined below. . . Saxifrageæ, 46.
      § Cor. irregular.
        Pet. 5, papilionaceous. Fil. 10, combined. . Cicereæ, 63.
        Pet. 4, cruciate. Fil. 6, in 2 parcels. . Fumarieæ, 100.
    ‡ Carpels combined into a single ov.
      § Pet. unequal. Fl's irregular.
        ‖ Sep. 2 or 3.
          Fl's with a spur. Stam 5. . . Balsamineæ, 32.
          Fl's not spurred. Stam. 2 or 3. . Portuleæ, 86.
        ‖ Sep. 5.
          Leaves stipuled. Stam. 5, often syngenesious. . . . } Violarieæ, 112.
          Leaves exstipuled. Stam. 8, monadelphous. Polygaleæ, 26.

§ Pet. equal. Fl's regular.
‖ Trees or large shrubs.
¶ Leaves large, expanded.
Stam. 4-5. . . . CELASTRINEÆ, 70.
Stam. about 8. . . . ACERINEÆ, 72.
¶ Leaves minute, scale-like. . . TAMARISCINEÆ, 112.
‖ Herbs or very low shrubs.
¶ Stam. tetradynamous (rarely 4), with cruciate fl's. . . . } BRASSICEÆ, 102.
¶ Stam. not tetradynamous.
** Leaves lobed, or compound,
stipulate. . . GERANIEÆ, 76.
exstipulate, 3-nate. . OXALIDEÆ, 78.
** Leaves simple,
†† with stip.
Pet. 3 or 4. . . ELATINEÆ, 74.
Pet. 5. . . ILLECEBREÆ, 85.
†† Stip. 0.
‡‡ Stigma simple, or entire.
Stam. 8 or 10. . ERICEÆ, 117.
Stam. 6 or 12. . LYTHARIEÆ, 45.
‡‡ Stigmas 2 or more, distinct.
§§ Cells of ov. 1-seeded.
Ov. 1-celled. . PLUMBAGINEÆ, 120.
Ov. 5-spuriously 10-celled. . } LINEÆ, 78.
§§ Cells of ov. 2 or more seeded.
‖ Placentæ parietal. . } FRANKENIEÆ, 112.
Stam. 5. . DROSEREÆ, 101.
Stam. 6. . FRANKENIEÆ, 112.
‖ Placentæ axile.
Leaves in opposite pairs. . } CARYOPHYLLEÆ, 79.
Leaves in a whorl of 4. . } TRILLIEÆ, 170.
† Stam. more than 12.
‡ Styles distinct.
§ Stam. inserted on cal. Leaves stipuled. . ROSEÆ, 48.
§ Stam. hypogynous.
‖ Cal. with an invol. of 3 to 9 bracts at base; fil. monadelphous. . . . } MALVEÆ, 75.
‖ Cal. without external bracts.
¶ Carpels distinct. . . . RANUNCULEÆ, 93.
¶ Carpels united.
Herbs with dotted, exstipuled leaves. . HYPERICINEÆ, 73.
Trees with stipuled leaves. . . TILIEÆ, 74.
‡ Stigmas united.
Cal. of 2 sep. . . . . PAPAVEREÆ, 98.
Cal. of more than 2 sep.
Pet. 5. . . . . CISTINEÆ, 101.
Pet. more than 5. . . . NYMPHÆREÆ, 98.
* Pet. 0, or not larger than sep.
† Trees or shrubs.
Style single. Ov. 1-celled. . . . THYMELEÆ, 70.
Stigmas 2, sessile. Ov. 2-celled. . . . ULMEÆ, 71.
Styles 3 or 4. Ov. 3 or 4-celled. . . . RHAMNEÆ, 71.
† Herbs.
‡ Stam. 12 or more.
Ov. of 1 or more distinct carpels. . . RANUNCULEÆ, 93.
Ov. 1-celled, of 3 united carpels; placentæ parietal RESEDEÆ, 111.
‡ Stam. less than 12.
§ Leaves with stip.
‖ Stip. ochreate. . . . POLYGONEÆ, 87.

‖ Stip. distinct.
Cal. with 2 or 4 external bracts. . ROSEÆ, 48.
Cal. without external bracts.
Stigma 1. . . URTICEÆ, 157.
Stigmas 2-4. . . . ILLECEBREÆ, 85.
§ Leaves without stip.
‖ Leaves alternate. . . . CHENOPODIEÆ, 90.
‖ Leaves opposite.
¶ Seed 1. . . . . SCLERANTHEÆ, 93.
¶ Seeds more than 1.
Cal. synsepalous, coloured. . PRIMULEÆ, 122.
Sep. distinct, herbaceous. . . CARYOPHYLLEÆ, 79.

DIVISION IV.

* Fl's regular.
† [1] Ov. of 5 wholly distinct carpels. . . . CRASSULEÆ, 42.
† [2] Ov. of 2-4 lobes, the styles combined.
Stigma simple, or bifid, erect or tufted plants. . BORAGINEÆ, 127.
Stigma entire, with a ring at its base; long, trailing plants. . . . . APOCYNEÆ, 116.
† [3] Ov. not distinctly lobed.
‡ Stam. equal in number, and opposite to lobes of cor.
§ Herbs.
Style 1. . . . . PRIMULEÆ, 122.
Styles 3. . . . . PORTULEÆ. 86.
Styles 5. . . . . PLUMBAGINEÆ, 120.
§ Trees. . . . . RHAMNEÆ, 71.
‡ Stam. alternate with lobes of cor. if equal to them in number; or in a different number.
§ Fl's in dense, imbricate spikes, with 4 long, protruding stams. . . . . PLANTAGINEÆ, 121.
§ Infl. various. Stam. short, or not so remarkably long.
‖ Anth with appendages. . . ERICEÆ, 117.
‖ Anth. simple.
¶ Trees or shrubs.
Stam. 2. . . OLEINEÆ, 124.
Stam. more than 2. . . ILICINEÆ, 116.
¶ Herbs.
Seeds few.
Stigmas 2. Stem twining. . CONVOLVULEÆ, 125.
Stigmas 3. Stem erect. . POLEMONIEÆ, 126.
Seeds indefinite.
Stam. inserted on cor.
Stig. 2-4-lobed; or simple, and with compound leaves. . . GENTIANEÆ, 114.
Stig. simple; leaves simple. SOLANEÆ, 124.
Stam. inserted on cal. . CAMPANULEÆ, 24.
* Fl's irregular.
† [1] Ov. 4-lobed, 4-seeded. . . . . MENTHEÆ, 130.
† [2] Ov. entire, 4-seeded. . . . . VERBENEÆ, 137.
† [3] Ov. entire, not 4-seeded.
‡ Stam. 5. Sep. 2 or 3. . . . PORTULEÆ, 86.
‡ Stam. 2, or didynacequs.
Ov. 1-celled.
Placenta free, central. . . . LENTIBULARIEÆ, 143.
Placentæ parietal. . . . OROBANCHEÆ, 113.
Ov. 2-celled. . . . . SCROFULARINEÆ, 137.

Division V.

* With petals, especially in the barren fl's.
  - † 1 Trees. . . . . ACERINEÆ, 72.
  - † 2 Parasitic shrubs. . . . . LORANTHEÆ, 40.
  - † 3 Herbs,
    - ‡ with twining stems, bearing tendrils. . . CUCURBITEÆ, 161.
    - ‡ Stem not twining.
      - § Carpels distinct. . . . . CRASSULEÆ, 43.
      - § Carpels united.
        - ‖ Fl's 2, fertile, enclosed in a prickly invol. ASTEREÆ, 6.
        - ‖ Fl's not in a prickly invol.
          - ¶ Stigma single.
            - Cor. 5-lobed. . . . VALERIANEÆ, 23.
            - Cor. 4-lobed.
              - Style 0. . . . LORANTAEÆ, 40.
              - Style long.
                - Water plants. . . PLANTAGINEÆ, 121.
                - Land plants. . . HALORAGEÆ, 43.
          - ¶ Stigmas 3-5. . . . CARYOPHYLLEÆ, 79.
* Without pet.
  - † Trees or shrubs.
    - ‡ Leaves stipuled if present at the time of flowering, or absent at that time.
      - § Ov. inferior, seated in a cup-shaped invol. . CORYLINEÆ, 144.
      - § Ov. superior, not in an invol.
        - Seeds 2. . . . . BETULINEÆ, 145.
        - Seeds many. . . . . SALICINEÆ, 146.
    - ‡ Stip. 0, the leaves generally absent at the time of flowering.
      - § Styles apparent; fruit fleshy.
        - Stigma 1. . . . . ELEAGNEÆ, 157.
        - Stigmas 2. . . . . MYRICEÆ, 157.
        - Stigmas 6-9-cleft. . . . EMPETREÆ, 161.
      - § Styles absent. Leaves rigid. . . PINEÆ, 162.
  - † Herbs.
    - ‡ Leaves stipuled.
      - § Stigma pencil-formed. . . . ROSEÆ, 48.
      - § Stigmas simple.
        - ‖ Ovary 2-3-celled. . . . EUPHORBIEÆ, 159.
        - ‖ Ovary 1-celled.
          - Stigmas 1-2. . . URTICEÆ, 157.
          - Stigmas 3. . . . . POLYGONEÆ, 87.
    - ‡ Leaves exstipuled.
      - § Land plants.
        - Cal. 2-parted. . . . . CHENOPODIEÆ, 90.
        - Cal. more than 2-parted. . . . AMARANTHEÆ, 89.
      - ‡ Water plants.
        - Cal. many-parted. . . . CERATOPHYLLEÆ, 158.
        - Cal. 0. . . . . CALLITRICHINEÆ, 159.

Division VI.

* Fl's irregular. . . . . ORCHIDEÆ, 163.
* Fl's regular.
  - † Cal. herbaceous. . . . . HYDROCHARIDEÆ, 163.
  - † Cal. petaloid.
    - ‡ Fl's monœcious. . . . . DIOSCOREÆ, 170.
    - ‡ Fl's perfect.
      - Style single. . . . . AMARYLLIDEÆ, 169.
      - Style triple. . . . . IRIDEÆ, 168.

Division VII.

* 1 Pet., and sometimes the sep., brightly coloured.	
† Styles or carpels distinct	
‡ Sep. herbaceous.	
Stam. 1-6. Leaves straight-ribbed.	Alismeæ, 206.
Stam. 8. Leaves much-ribbed.	Trilliæ, 170.
‡ Sep. petaloid.	
Fil. bearded.	Junceæ, 171.
Fil. not bearded.	Melantheæ, 174.
† Styles united.	Lilieæ, 171.
* 2 Perianth herbaceous or 0.	
‡ Fl's arranged on a spadix.	Aroideæ, 204.
† Fl's not on a spadix.	
Leaves lenticular.	Lemneæ, 205.
Leaves linear.	Juncagineæ, 207.
* 3 Perianth of membranous or chaffy scales,	
† and composed of 6 pieces in a whorl.	Junceæ, 175.
† Scales 3 in a whorl, or in alternate pairs.	
‡ Seeds single.	
Leaves with slit sheaths. Stem round.	Gramineæ, 178.
Leaves with entire sheaths. Stem triangular.	Cypereæ, 194.
‡ Seeds 3.	Eriocauleæ, 203.

Division VIII.

Fructification on the backs or edges of leaves.	Filiceæ, 210.
Fructification, capsules in the axils or swollen bases of leaves.	Marsilieæ, 216.
Fructification in spikes, or on the upright branches.	Lycopodieæ, 217.

ANALYSIS

OF THE

LINNÆAN ORDERS.

Class I.—MONANDRIA.—1. Stamen.

Order I.—MONOGYNIA.—1 Style.
- * Cor. superior. .. .. Centranthus, 23.
- * Cor. 0.
  - † Cal. 8-cleft. .. .. Alchemilla, 49.
  - † Cal.-limb obsolete.
    - ‡ Stigma 1. .. .. Hippuris, 43.
    - ‡ Stigma 2-3-fid. .. .. Salicornia, 91.

Order I.—Digynia.—2 Styles. .. .. .. Callitrichinæ, 159.

Class II.— DIANDRIA.—2 Stamens.

Order I.—MONOGYNIA.—1 Style.
- * Cor. synpetalous, inferior,
  - † regular, ... Ligustrum, 124.
  - † irregular.
    - ‡ Ov. 4-lobed. .. .. .. Menthreæ, 130.
    - ‡ Ov. entire.
      - § Cor. rotate. .. Veronica, 138.
      - § Cor. ringent .. Lentibularieæ, 143.
- * Cor. 0.
  - † 1 Trees or shrubs. .. .. .. Oleineæ, 124.
  - † 2 Floating plants. Nuts 4. .. .. Ruppia, 209.
  - † 3 Herbs with chaffy fl's. Nut 1. .. Cladium, 195.

Order II.—DIGINIA.—2 Styles.
- Infl. spiked. .. .. Anthoxanthum, 185.
- Infl. panicled. .. Hierochloe, 187.

Class III.—TRIANDRIA.—3 Stamens.

Order I.—MONOGYNIA.—1 Style.
- * Fl's superior, petaloid.
  - † Leaves branch-ribbed. .. Valerianeæ, 23.
  - † Leaves straight-ribbed. .. Irideæ, 168.
- * Fl's inferior, glumaceous.
  - † Stem triangular. .. .. Cypereæ, 194.
  - † Stem round.
    - ‡ Fl's spiked. .. Nardus, 182.
    - ‡ Fl's clustered. .. Juncus, 176.

ORDER II.—DIGYNIA.—2 Styles. .. .. .. GRAMINEÆ, 178.
ORDER III.—TRIGYNIA.—3 Styles.
* Ov. 3. .. .. Tillæa, 44.
* Ov. 1. † Sep. 2. Pet. cohering. .. .. PORTULEÆ, 86.
† Sep. 5. ‡ Pet. 5, emarginate. .. Polycarpon, 86.
‡ Pet. 5, jagged at end. .. Holosteum. 83.

CLASS IV.—TETRANDRIA.—4 Stamens.

ORDER I.—MONOGYNIA.—1 Style.
* 1 Cor. synpetalous.
† Ov. inferior. ‡ Seed 1. .. .. .. DIPSACEÆ. 22.
‡ Seeds 2. .. .. .. GALIEÆ, 27.
† Ov. superior. ‡ Fl's in brownish spikes. .. PLANTAGINEÆ, 120.
‡ Fl's brightly coloured. ..
§ Stam. opposite pet. .. Centunculus, 122.
§ Stam. alternate with pet.
Plants leafy. .. GENTIANEÆ, 114.
Plants leafless. .. Cuscuta, 126.
* 2 Cor. of 4 pet. † Ov. superior.
‡ Herbs. § Leaves simple. .. Epimedium, 93.
§ Leaves compound.
Fruit a siliqua. .. Cardamine, 105.
Fruit a silicula. .. Coronopus, 109.
‡ Shrubs. .. .. .. Enonymus, 71.
† Ov. inferior. .. .. .. CORNEÆ, 40.
* 3 Perianth single. † Ov. inferior. .. .. .. Isnardia, 42.
† Ov. superior.
‡ 1 Fl's 4-fid, § in cymes, .. Parietaria, 158.
§ in racemes .. Malanthemum, 174.
‡ 2 Fl's 3-cleft. .. .. Alchemilla, 49.
‡ 3 Fl's 4-cleft, with 4 outer bracts. Sanguisorba, 49.
ORDER II.—DIGYNIA.—2 Styles.
* Cor. synsepalous. † Ov. 2-celled, leafy. .. GENTIANEÆ, 114.
† Ov. 3-celled. Leaves 0. .. Cuscuta, 126.
* Pet 0. .. .. Alchemilla, 49.
ORDER III. TETRAGYNIA.—4 Styles.
* Cor. synpetalous. .. .. ILICINEÆ, 116.
* Pet. separate or 0.
† Water plants. .. .. Potamogeton.
† Land plants. ‡ Carpels distinct. .. .. Tillæa, 44.
‡ Carpels united. § Ov. 8-celled. Radiola, 79.
§ Ov. 1-celled. CARYOPHYLLEÆ, 79.

CLASS V.—PENTANDRIA.—5 Stamens.

ORDER I.—MONOGYNIA.—1 Style.
* 1 Cor. synpetalous.
† Ov. superior.
‡ Ov. of 2-4 distinct carpels. § Seed 1 in each. .. BORAGINEÆ, 127.
§ Follicles 2. Seeds many. .. } APOCYNEÆ, 116.
‡ Carpels consolidated.
§ Seeds few. ‖ Stem climbing; stigmas 2. .. CONVOLVULEÆ, 125.
‖ Stem erect; stigmas 3. .. POLEMONIEÆ, 126.
§ Seeds numerous.
‖ Stam. opposite lobes of cor. .. .. PRIMULEÆ, 122.
‖ Stam. alternate with lobes of cor.
¶ Shrub; ov. 5-celled. .. .. Azalea, 119.
¶ Herbs; ov. 2-4-celled.
Fl's slightly irregular. .. .. Verbascum, 141.
Fl's regular.
Stig. 2-4-lobed; or simple, and with compound leaves. .. } GENTIANEÆ, 114.
Stigma simple; leaves simple. SOLANEÆ, 124.

* 2 Cor. polypetalous.
  † Ov. superior.
    ‡ Trees. § Stam. opposite pet. .. .. Rhamnus, 71.
    § Stam. alternate with pet. .. .. Euonymus, 72.
    ‡ Shrubs. § Sep. 2. .. .. .. Balsamineæ, 77.
    § Sep. 5. .. .. .. Violarieæ, 112.
  † Ov. inferior. ‡ Creeping shrubs: seeds 3-5. .. Hedera, 29.
    ‡ Erect shrubs; seeds many. .. Grossularieæ, 29.
* 3 Cor. 0.
  † Ov. inferior. .. .. Santalineæ, 40
  † Ov. superior. ‡ Stam. alternate with sep. .. Glaux, 122.
    ‡ Stam. opposite to sep. .. .. Illecebrum, 85.

Order II.—DIGYNIA.—2 Styles.
* 1 Cor. sympetalous. † Leafy erect plants. .. .. Gentianeæ, 114.
  † Leafless climbing parasites. .. Cuscuta, 126.
* 2 Cor. polypetalous. † Ov. inferior. .. . Angelicæ, 29.
  † Ov. superior. .. .. Staphylæa, 70.
* 3 Cor. 0. † Trees. .. .. Ulmeæ, 71.
  † Herbs. ‡ Stip. ochreate. .. .. Polygonum, 47.
    ‡ Stip. simple, scarious. .. .. Illecebreæ, 85.
    ‡ Stip. 0. § Ovule 1. .. Chenopodieæ, 90.
    § Ovules 2. .. Scleranthreæ, 93.

Order III.—TRIGYNIA.—3 Styles.
* Ov. superior. † Trees. ‡ Ov. 2-3-celled. .. .. Staphylæa, 29.
  ‡ Ov. 1-celled. .. .. Tamariscineæ, 112.
  † Shrubs. ‡ Pet. 5. § Seed 1. .. Corrigiola, 86.
    § Seeds many. .. Stellaria, 88.

Order IV.—TETRAGYNIA.—4 Styles. .. : .. Parnassia, 74.

Order V.—PENTAGYNIA—5 Styles.
* 1 Ov. 1-celled, † many-seeded. .. .. .. Caryophylleæ, 79.
  † 1-seeded. .. .. .. Statice, 120.
* 2 Ov. 5 or 10-celled. .. .. Lineæ, 78.
* 3 Ov. of 5 distinct carpels. .. .. Sibbaldia, 61.

Order VI.—HEXAGYNIA, ... Droseræ, 101.

Order VII.—POLYGYNIA. .. .. Ranunculeæ, 93.

Class VI.—HEXANDRIA.—6 Stamens.

Order I.—MONOGYNIA.—1 Style.
* Leaves branch-ribbed.
  † Stam. pet. and sep. opposite. .. .. .. Berberis, 93.
  † Stam. alternate with pet. ‡ Stigmas 3. .. Frankenieæ, 112.
    ‡ Stigmas 1. .. Lythrarieæ, 45.
* Leaves straight-ribbed.
  † Ov. inferior. .. .. Irideæ, 168.
  † Ov superior. ‡ Fl's on a spadix, ... Acorus, 205.
    ‡ Fl's not on a spadix. § petaloid. .. Lilieæ, 171.
    § scale-like. Juncæ, 175.

Order II.—DIGYNIA.—2 Styles. .. .. .. Oxyria, 89.

Order III.—TRIGYNIA.—3 Styles.
* Leaves branch-ribbed. .. .. Rumex.
* Leaves straight-ribbed. † Cor. large, petaloid. .. Melanthreæ, 174.
  † Cor. small, herbaceous. .. Juncagineæ, 207.

Orders IV. and V.—HEXA- and POLYGYNIA. .. .. Alismeæ, 206.

Class VII.—HEPTANDRIA.—7 Stamens.

Order I.—MONOGYNIA. . .. .. . Trientalis, 122.

CLASS VIII.—OCTANDRIA.—8 Stamens.

ORDER I.—MONOGYNIA.—1 Style.
- * Cor. synpetalous. † Caps. 1-celled. .. .. Chlora, 115.
  - † Caps. many-celled. .. .. ERICEÆ, 117.
- * Cor. polypetalous. † Fruit 2-celled, winged. .. ACERINEÆ, 72.
  - † Fruit 4-celled, not winged. .. ONAGREÆ, 41.
- * Cor. 0. † Shrubs. .. .. .. THYMELEÆ.
  - † Herbs. .. .. .. Monotropa, 120.

ORDER II.—DIGYNIA.—2 Styles.
- * Seeds many. .. .. Chrysoplenium, 46.
- * Seed single. † Stip. ochreous. .. .. Polygonum, 87.
  - † Stip. 0. .. .. .. SCLERANTHEÆ, 93.

ORDER III.—TETRAGYNIA.
- * Leaves 4 in a whorl. .. .. TRILLIEÆ, 170.
- * Leaves not whorled, † compound, ... Adoxa, 39.
  - † simple, ‡ stipuled, .. ELATINEÆ, 74.
  - ‡ not stipuled. .. Sagina, 84.

CLASS IX.—ENNEANDRIA.—9 Stamens.

ORDER I.—HEXOGYNIA. .. .. Butomus. 206.

CLASS X.—DECANDRIA.—10 Stamens.

ORDER I.—MONOGYNIA.—1 Style. .. .. .. ERICEÆ, 117.

ORDER II.—DIGYNIA.—2 Styles.
- * Cor. 0. † Leaves simple. . .. .. SCLERANTHEÆ, 93.
  - † Leaves compound. .. .. Chrysoplenium, 46.
- * Cor. present. ‡ Pet. clawed; ov. 1-celled. .. Dianthus, 79.
  - ‡ Pet. not clawed; ov. 2-celled. .. SAXIFRAGA, 46.

ORDER III.—TRIGYNIA.—3 Styles
- Stip. ochreous. .. .. Polygonum, 87.
- Stip. simple. .. .. Spergularia, 86.
- Stip. 0. .. .. CARYOPHYLLEÆ, 79.

ORDER IV.—PENTAGYNIA.—5 Styles.
- * Carpels distinct. .. .. CRASSULEÆ, 43.
- * Carpels united.
  - † Leaves compound. ‡ Fl's solitary. . .. OXALIDEÆ, 78.
    - ‡ Fl's clustered, .. . Adoxa, 39.
  - † Leaves simple, ‡ stipuled. .. .. .. Spergula, 86.
    - ‡ Stip. 0. .. .. .. CARYOPHYLLEÆ, 79.

CLASS XII.—DODECANDRIA.—12-19 Stamens.

ORDER I.—MONOGYNIA.—1 Style.
- Caps. 6-celled. .. .. Asarum, 41.
- Caps. 2-celled. .. .. Lythrum, 45.

ORDER II.—DIGYNIA.—2 Styles. .. .. .. Agrimonia, 53.

ORDER III.—TRIGYNIA.—3 Styles. .. .. .. RESEDÆ, 111.

ORDER IV.—TETRAGYNIA.—4 Styles. .. .. .. Potentilla, 61.

ORDER V.—DODECAGYNIA.—12 Styles. .. .. .. Sempervivum, 45.

CLASS XII.—ICOSANDRIA.—Stamens 20 or more, Perigynous.

Fl's regular; leaves stipuled. .. .. ROSEÆ, 48.

CLASS XIII.—POLYANDRIA.—20 or more Hypogynous Stamens.

ORDER I.—MONOGYNIA.—1 Style.

* [1] Pet. 4.	† Sep. 2, caducous.	..	Papaveræ, 98.
	† Sep. 4, caducous.	..	Actæa, 98.
* [2] Pet. 5.	† Sep. 3, equal, or 5, and unequal.	..	CISTINEÆ, 101.
	† Sep. 5-parted.	..	TILIEÆ, 74.
* Pet. numerous. ..	.. .. ..	..	NYMPHÆEÆ, 98.

ORDER II.—DI-PENTA—OR POLYGYNIA.—Styles 2 or more.

* Ov. apocarpous, or 3-celled.			
Leaves compound, or branch-ribbed.		..	RANUNCULEÆ, 93.
Leaves simple, and straight-ribbed.	..	..	Stratiotes, 163.
* Ov. syncarpous, 1-celled. ..	..	..	RESEDEÆ, 111.

CLASS XIV.—DIDYNAMIA.—2 long and 2 short Stamens.

* Ov. deeply 4-lobed.	.. ..	..	MENTHEÆ, 130.
* Ov. entire.	† inferior, ..	..	Linnæa, 27.
	† superior, ‡ 1-celled,	..	OROBANCHEÆ, 112.
	‡ 2-celled,	..	SCROFULARINEÆ, 137.
	‡ 4-celled,	..	VERBENEÆ, 137.

CLASS XV.—TETRADYNAMIA.—4 long and 2 short Stamens.

Fl's cruciform.	.. ..	..	BRASSICEÆ, 102.

CLASSES XVI TO XVIII.—MON-DI-POLYADELPHYA.—Fil. cohering into 1, 2, or more sets.

* Fl's regular.				
† Stam. 5-10.	‡ Leaves more or less divided, or compound.			
		§ Leaves 3-nate; leafl. entire.	..	OXALIDEÆ, 78:
		§ Leaves not 3-nate; leafl. divided.	..	GERANIEÆ, 76.
	‡ Leaves simple, entire.		..	LINEÆ, 78.
† Stam. indefinite,	‡ monodelphous,		..	MALVEÆ, 75.
	‡ polyadelphous.		..	HYPERICINEÆ, 73.
* Fl's irregular.	† Stam. 6.	..	..	FUMARIEÆ, 100.
	† Stam. 8.	..	..	POLYGALEÆ, 72.
	† Stam. 10.	..	..	CICEREÆ, 63.

CLASS XIX.—SYNGENESIA.—Anth cohering.

Fl's in dense heads.	.. .. ..	..	ASTEREÆ, 6.

CLASS XX.—GYNANDRIA.—Stam. inserted on the pistil.

Stam. 1 or 2.	.. ..	..	ORCHIDEÆ, 163.
Stam. 6.	.. ..	..	Aristolochia.

CLASSES XXI., XXII., and XXIII.—MONŒCIA, DIŒCIA, and POLYGAMIA.—Some fl's pistilliferous, and some staminiferous.

See DIVISION VI. of the preceding Analysis,

CLASS XXIV.—CRYPTOGAMIA.—Stam. and pistils 0.

See DIVISION VIII. of the preceding Analysis.

A

HAND-BOOK OF FIELD-BOTANY.

TABLE OF THE NATURAL ORDERS

WHICH COMPRISE INDIGENOUS PLANTS.

Phanerogamiæ.

EXOGENÆ.

PERIGYNÆ.		DICLINÆ.	HYPOGYNÆ.	
SYNPETALÆ.	APOPETALÆ.	ANGIOSPERMÆ.	APOPETALÆ.	SYNPETALÆ.

A. *Ovary simple, apocarpous, or syncarpous with axile or basal placentæ.*

a. *Seeds without albumen, or this but small in quantity.*

1. Asteræ.	15. Haloragæ.	71. Corylineæ.	16. Crassuleæ.	70. Lentibularieæ.
2. Dipsaceæ.	14. Onagræ.	72. Betulineæ.	17. Lythrarieæ.	69. Scrofularineæ.
3. Valerianeæ.		73. Salicineæ.	18. Saxifrageæ.	68. Verbeneæ.
		74. Myriceæ.	19. Roseæ.	67. Mentheæ.
		75. Eleagneæ.	20. Ciceræ.	66. Boragineæ.
		76. Urticeæ.	21. Thymeleæ.	65. Polemonieæ.
		77. Ceratophylleæ.	22. Celastrineæ.	64. Convolvuleæ.
			23. Rhamneæ.	63. Solaneæ.
			24. Ulmeæ.	62. Oleineæ.
			25. Acerineæ.	
			26. Polygaleæ.	
			27. Hypericineæ.	
			28. Elatineæ.	
			29. Tilieæ.	
			30. Malveæ.	
			31. Geranieæ.	
			32. Balsamineæ.	
			33. Oxalideæ.	
			34. Lineæ.	

b. *Seeds containing a large quantity of albumen.*

4. Campanuleæ.	13. Aristolochieæ.	78. Callitrichineæ.	35. Caryophylleæ.	61. Primuleæ.
5. Lonicereæ.	12. Loranthæ.	79. Euphorbieæ.	36. Illecebreæ.	60. Plantagineæ.
6. Galieæ.	11. Santalineæ.	80. Empetreæ.	37. Portuleæ.	59. Plumbagineæ.
	10. Corneæ.		38. Polygoneæ.	58. Ericeæ.
	9. Arali eæ.	GYMNOSPERMÆ.	39. Amaranthæ.	57. Ilicineæ.
	8. Angelicæ.	82. Pineæ.	40. Chenopodieæ.	56. Apocyneæ.
			41. Scleranthæ.	
			42. Berberideæ.	
			43. Ranunculeæ.	
			44. Nymphæeæ.	

B. *Ovary compound, 1-celled, with parietal placentæ.*

a. *Seeds containing a large quantity of albumen.*

7. Grossularieæ.		45. Papavereæ.	55. Gentianeæ.
		46. Fumarieæ.	54. Orobancheæ.
		47. Droseræ.	

b. *Seeds without albumen.*

ANGIOSPERMÆ.	48. Cistineæ.	
81. Cucurbiteæ.	49. Brassiceæ.	
	50. Resedeæ.	
	51. Tamariscineæ.	
	52. Frankenieæ.	
	53. Violarieæ.	

ENDOGENÆ.

PERIGYNÆ.	HYPOGYNÆ.
A. Seeds without albumen.	
83. Hydrocharideæ.	98. Juncagineæ.
84. Orchideæ.	97. Alismeæ.
B. Seeds containing a large quantity of albumen.	
85. Irideæ.	96. Lemneæ.
86. Amaryllideæ.	95. Aroideæ.
87. Dioscoreæ.	94. Eriocauleæ.
	93. Cyperaceæ.
	92. Gramineæ.
	91. Juncineæ.
	90. Melanthaceæ.
	89. Lilieæ.
	88. Trillieæ.

Cryptogamiæ.

ACROGENÆ.

99. Filiceæ. 100. Marsilieæ. 101. Lycopodieæ.

ABBREVIATIONS.

Alb.	albumen.
Anth.	anther.
Cal.	calyx.
Caps.	capsule.
Cot.	cotyledons.
Embr.	embryo.
Fil.	filament.
Fl.	flower.
Flor.	floret.
Infl.	inflorescence.
Invol.	involucre.
Leafl.	leaflet.
Ov.	ovary.
Ped.	peduncle.
Pet.	petal.
Rad.	radicle.
Sep.	sepal.
Stam.	stamen.
Stip.	stipule.

Countries in which alone the plant has been discovered :—

E.	England.
I.	Ireland.
S.	Scotland.
C.	Channel Islands.

Duration.

A.	Annual.
B.	Biennial.
P.	Perennial.
S.	Shrub.
T.	Tree.

This mark, * following the name of the species, indicates, that though *naturalized*, the plant is a doubtful native.

Colours.

(B.)	Blue.
(Br.)	Brown.
(G.)	Green.
(P.)	Purple.
(R.)	Red.
(Y.)	Yellow.
(W.)	White.

When a small letter precedes the large, it signifies that the colour indicated by the latter has a shade of that indicated by the former; as—

(g.W.)	Greenish white.
(b.P.)	Bluish purple.

The signs + and — indicate the shade of colour, as—

(+ R.)	Deep red.
(— P.)	Pale purple or purplish, &c.
(W. *v.* P.)	White or purple.

The sign || Striped.
——— ∴ Speckled.
——— * Spotted.

Used thus—(W || R.) White striped with red.
(Y.∴Br.) Yellow speckled with brown.
(Y*Br.) Yellow, with a brown spot.

Time of flowering, by the following numbers placed immediately after the letters indicating the duration of the plant :—

1.	January.
2.	February.
3.	March.
&c., &c.	
12.	December.

A

HAND-BOOK OF FIELD-BOTANY.

Phanerogamous or Flowering Plants.

PLANTS, mostly furnished with calyx and corolla; always, however, having conspicuous stamens and pistils.

CLASS I.—EXOGENS OR DICOTYLEDONS.

Stem often woody, and formed of bark, wood and pith; when cut transversely, lines of condensed cellular tissue are visible, radiating from the centre to the circumference, and concentric circles of wood, corresponding in number to the years of the stem's growth; one circle or layer of new wood being annually formed immediately beneath the bark. Leaves having their ribs branching and arranged in a net-work. Flowers with their parts disposed in a 5-nary or 4-nary, rarely in a 3-nary manner. Embryo with 2 or more opposite cotyledons; these rarely absent; the radicle, in germination, lengthening without having to break through the coat of the embryo.

SUB-CLASS I.—PERIGYNOUS EXOGENS.

EXOGENS, having perfect flowers, with the tube of the calyx adherent to the ovary, its limb superior; the stamens being, therefore, epigynous.

DIVISION I.—SYNPETALOUS PERIGYNOUS EXOGENS.

PERIGYNOUS EXOGENS; the petals more or less combined with each other, so as to form a corolla, which is removable in a single piece:—monopetalous.

ORDER I.—ASTEREÆ OR COMPOSITÆ.

Herbs, or rarely shrubs, with exstipulate leaves. Fl's. (florets), collected *in dense heads*, upon a common receptacle, *surrounded by an invol.* of several bracts. Receptacle either covered with scales (paleaceous), or bristles, or naked; sometimes pitted with pentagonal holes (areolate), or these with their edges somewhat elevated (alveolate). Limb of cal. superior, often 0, or variously divided into bristles, hairs (pilose), or a feathery down, called pappus, which may be in 1 or more rows, and sessile or stipitate. Cor. ligulate, funnel-shaped, or tubular. Stam. 4-5; *anth. cohering*, (free in Xanthium); fil. free, (cohering in Xanthium). Ov. 1-celled; style simple; stigmas 2. Fruit small, indehiscent, dry, crowned with the pappus. Seed 1; embr. erect; alb. 0.

SUB-ORDER I.—CICHORINÆ. Plants with a bitter, narcotic, milky juice. Flor. all ligulate, perfect. Style not tumid below its bifurcation.

- * 1 Pappus 0. Flor. 8-12. . . . . 1. LAPSANA.
- * 2 Pappus a membranous margin or scaly. Flor. numerous.
  - Heads terminal. . . . . 2. ARNOSERIS
  - Heads lateral . . . . . 3. CICHORIUM.
- * 3 Pappus pilose or feathery.
  - † Receptacle scaly. Pappus feathery. . . . . 4. HYPOCHŒRIS.
  - † Receptacle naked, rarely pilose.
    - ‡ Pappus rigid, brittle, pilose, turning brownish. 5. HIERACIUM.
    - ‡ Pappus, soft, silvery.
      - § pilose, and not dilated at base.
        - Invol. small cylindrical with few flor. . 6. LACTUCA.
        - Invol. with many flor.
          - Scape simple naked. . . . . 7. TARAXACUM.
          - Stalks branching, leafy or bracteate.
            - Invol. tumid at base. Pappus sessile. . . . . } 8. SONCHUS.
            - Invol. not tumid at base.
              - Pappus stipitate. . . 11. BARKHAUSIA.
              - Pappus sessile.
                - Fl's. yellow. . . 10. CREPIS.
                - Fl's. blue. . . . 9. MULGEDIUM.
      - § Pappus feathery, especially in central flor.
        - Scape naked. Pappus sessile. . . 12. LEONTODON.
        - Stalks leafy or bracteate.
          - Pappus sessile in fruit and flor.
            - Invol. of many rows of lessening bracts. . . . . } 13. OPORINIA.
            - Invol. of 1 row, with lax linear ones at base. . . . . } 14. PICRIS.
          - Pappus stipitate in fruit, in many rows.
            - Stalks simple. . . . 15. TRAGOPOGON.
            - Stalks branching. . . . 16. HELMINTHIA.

SUB-ORDER II.—CYNARINÆ or CYNAROCEPHALÆ. Possessing bitter and tonic properties, and a limpid juice. Flor. all tubular, with an inflated throat, generally spreading into a hemispherical head. Invol. conical and rigid. Style thickened—articulated—below its bifurcation.

- * Leaves spiny or fringed with minute prickles.
  - † Receptacle scaly or bristly.
    - Inner bracts of invol. not spiny, coloured. . . . 17. CARLINA.
    - All the bracts spiny herbaceous.
      - Fil. united. . . . . 20. SILYBUM.
      - Fil. free. . . . . 21. CARDUUS.
  - † Receptacle honey-combed, (alveolate.) . . . . 22. ONOPORDUM.

* Leaves not spiny or prickly.
  † Pappus shorter than seed, pilose, or 0.
    Involucral bracts dense, with hooked points. . . 23. ARCTIUM.
    Involucral bracts scarious or spinous, with straight points. . . . . 19. CENTAUREA.
  † Pappus longer than seed. Invol. not spinous.
    Heads with perfect flor. Anth. ciliated at base. . . 18. SAUSSUREA.
    Heads dioecious. Anth. simple at base. . . . . 24. SERRATULA.

SUB-ORDER III.—ASTERINÆ or CORYMBIFERÆ. Plants with aromatic, bitter, and stimulating properties. Flor. tubular, the outer often ligulate and radiant; never inflated in the throat; the tubular flor. erect, parallel, not spreading. Invol. hemispherical or cylindrical, not spiny. Style cylindrical, not articulated.

* Heads with a ray of ligulate flor. of a different colour from those of disk; or of the same colour, and then without pappus.
  † Pappus 0, or membranous.
    ‡ Invol. of more than 1 row of bracts with membranous edges.
      Receptacle naked, plane or convex. . . . . 41. CHRYSANTHEMUM.
      Receptacle paleaceous, convex or conical. . . 42. ANTHEMIS.
    ‡ Invol. of 1 row of bracts without membranous edges.
      Scape single-headed. . . . . 25. BELLIS.
      Stalks many-headed, branching. . . . . 43. MATRICARIA.
  † Pappus pilose.
    Flor. of ray in 1 or 2 rows. Ped. with a few bracts. . 26. ASTER.
    Flor. of ray in many rows. Ped. naked. . . . . 27. ERIGERON.
* Heads not radiant; or if with a ray, this either insignificant or of the same colour as disk, and the fruits without pappus.
  † [1] Pappus of 2-5 persistent rough awns. . . . . 35. BIDENS.
  † [2] Pappus pilose or feathery.
    ‡ [1] Invol. of 1 row of equal bracts.
      § Stalks simple, scaly, or bracteate.
        Heads numerous, in a thyrsus . . . . 33. PETASITES.
        Head solitary. . . . . 34. TUSSILAGO.
      § Stalks branched, leafy.
        Heads radiant. . . . . 36. CINERARIA.
        Heads not radiant. . . . . 28. CHRYSOCOMA.
    ‡ [2] Invol. of 1 row of bracts, and short lax ones with scarious tips at base. . . . . 37. SENECIO.
    ‡ [3] Invol. of 2-3 rows of equal bracts. . . . . 38. DORONICUM.
    ‡ [4] Invol. of 2 or more rows of unequal bracts.
      § Heads with a ray,
        of 5-15 flor. Anth. simple. . . . . 29. SOLIDAGO.
        of many flor. Anth. with 2 setæ at base.
          Pappus in 1 row. Fruit beaked. . . 30. INULA.
          Pappus in 2 rows. Fruit not beaked. . 31. PULICARIA.
      § Heads not radiant.
        Bracts of invol. herbaceous. . . . . 32. EUPATORIUM.
        Bracts of invol. scarious, dry.
          Outer flor. 3-toothed, intermixed with inner bracts of invol. . . . . 39. FILAGO.
          Outer flor. 5-toothed, not as last. . . 40. GNAPHALIUM.
  † [3] Pappus 0 or a membranous margin.
    Heads monoecious. Anth. distant. . . . . 48. XANTHIUM.
    Heads with perfect flor. Anth. united.
      Heads with a ray of 5-10 short flor. . . . 44. ACHILLÆA.
      Heads without a ray.
        Receptacle covered with fringed scales. . . 45. DIOTIS.
        Receptable naked or hairy.
          Pappus a membranous margin. . . 46. TANACETUM.
          Pappus 0. . . . . 47. ARTEMISIA.

N.B.—The species following are arranged according to the plan observed in De Candolle's Prodromus, altering the nomenclature in accordance with that observed throughout the present work.

SECTION I.—LIGULIFLORÆ.

All the florets slit or ligulate.

SUB-ORDER I.—CICHORINÆ.—Style cylindrical above, and with its long obtuse branches equally pubescent. Stigmatic lines prominent, narrow, terminating below the middle of the branches. Lactescent plants, with alternate leaves.

Tr. I. *LAPSANIDÆ. Receptacle naked. Pappus* 0.

1. LAPSA'NA. *L.* Nipple-wort.

Invol. of 1 row of erect bracts, and 4-5 short ones at base. Fruit striated, compressed.

1. L. *communis.* *A.* 6, 7. (Y.) 20. Invol. glabrous, angular in fruit; stem panicled; leaves ovate, toothed or lobed, the lower lyrate.—Waste ground.

Tr. II. *HYOSERIDÆ. Receptacle naked. Pappus coroniform.*

2. ARNO'SERIS. *Gærtn.* Swine's-succory.

Invol. of 1 row of about 12 narrow keeled bracts, at length converging, and a few small ones at base. Fruit angular, crowned with an elevated entire margin.

A. *pusilla.* *A.* 6, 8. (Y.) E. S.-3. Scape branched, very thick and fistulose upwards; leaves obovate-oblong, toothed.—Gravelly places.

3. CICHO'RIUM. *L.* Succory.

Invol. of an inner row of 8-10 bracts at length reflexed, and an outer of 5 lax shorter ones. Fruit turbinate, crowned with 2 rows of short scales.

1. C. *Intybus.* *P.* 7, 8. (B.) 18. Heads sessile in pairs; leaves runcinate, hispid on the keel, the upper oblong.—Gravelly banks.

Tr. III. *HYPOCHŒRIDÆ. Receptacle scaly. Pappus feathery, especially on the inner fruits.*

4. HYPOCHÆ'RIS. *L.* Cat's-ear.

Invol. oblong, imbricated. Fruit striated, often beaked.

* Pappus stipitate in flor., and fruit in 1 row.

1. H. *maculáta.* *P.* 7, 8. (+Y.) E. S.-1. Stem nearly solitary, almost leafless; leaves radical, obovate-oblong, toothed, spotted.—Ormeshead, Wales. Forfar.

* Pappus sessile in the flor. in 2 rows, the outer short and setaceous, the inner long and feathery.

2. H. *radicáta.* *P.* 7, 8. (Y.) 20. Leaves runcinate, obtuse, scabrous; stalk single, branched, leafless, scaly; pappus of all the fruits stalked.—Waste ground.

3. H. *glábra.* *A.* 7, 8. (Y.) E. S.-8. Leaves oblong, sinuate-dentate smooth; stalks numerous, branched, slightly leafy and scaly; pappus of the outer fruit sessile.—Sandy places.

β. *Balbisii.* pappus all stipitate.—Kent. Salop.

Tr. IV. *HIERACIDÆ. Receptacle generally without scales. Pappus filiform, rigid, bristly, never feathery, nor dilated at the base; turning brown, or yellowish.*

5. HIERA'CIUM. *L.* Hawkweed.

Invol. imbricated with many oblong bracts. Receptacle alveolate, or nearly naked. Fruit angular, furrowed, with an entire or toothed margin.

* Stalks 1-2 headed. (See also 5. H. murorum β.)

† Scions creeping.

1. H. *Pilosella.* *P.* 5-8. (Y.) 20. — Stem leafless; leaves entire elliptic-lanceolate hairy, downy beneath; bracts linear-lanceolate hairy.—Dry banks.

β. *Peleteriánum.* — leaves lanceolate, and with the invol. clothed with long, silky, straggling hairs.

† Scions 0; invol. leaves and stem covered with long, silky hairs.

2. H. *alpínum.* *P.* 7, 8. (Y.) E. S.-1. — Lower leaves obovate-spathulate, of stem, 1 or more, linear-lanceolate; bracts linear-attenuate.—Dry rocks.

β. *Hálleri.* — radical leaves toothed.

3. H. *villósum.* *P.* 7. (Y.) S-1. — Lower leaves oblong-lanceolate; those of stem ovate clasping; bracts attenuate from an ovate base.—Rocks near Clova. Loch-na-gar.

* Stalks many headed.

† Heads sessile, in a terminal corymb.

4. H. *aurantiácum.** *P.* 6-9. (+ Y.) S. E.-3. — Scape nearly leafless, simple, hairy; leaves obovate-lanceolate, entire, rough with longish hairs.—Woods.

† Heads stalked.

‡ Stem 1-2-leaved.

5. H. *murórum.* *P.* 6-8. (Y.) 15. — Radical leaves ovate or cordate, with retroflexed teeth at base; petioles hairy; invol. pubescent.—Rocks.

β. *pulmonárium.* — leaves ovate-lanceolate, toothed forwards; heads few.

γ. *Lawsoni.* — leaves nearly entire, and with the petioles very silky.

‡ Stem many leaved.

§ Lower leaves sessile,

6. H. *prenanthoides.* *P.* 8. (Y.) S-5. — Invol. of few bracts, nearly simple; ped. glandular-hairy; leaves all clasping, denticulate; fruit smooth.—River sides.

7. H. *inuloides.* *P.* 8. (Y.) S-1. — Invol. of many rows of imbricated, unequal scales; ped. not glandular; leaves not clasping; fruit rough.—Highland woods.

§ Lower leaves narrowing downwards into distinct petioles.

‖ Upper leaves clasping,

¶ ovate and taper-pointed; plants hairy; petioles shaggy, winged.

8. H. *Lapeyroúsii.* *P.* 8. (Y.) E. L.-1. — Radical leaves oblong-ovate, denticulate; stem very hairy, glandular upwards.—Teesdale. Garra Head, Antrim.

9. H. *cerinthoides.* *P.* 8. (Y.) S-1. — Radical leaves oblong-lanceolate, nearly entire, stem slightly hairy, glandular upwards.—Highlands.

¶ Upper leaves cordate, petioles of lower winged, or dilated, hairy.

10. H. *amplexicaúle.* *P.* 8. (Y.) E. S.-1. — Lower leaves oblong-obovate toothed; plant glandular-hairy throughout.—Clova Mountains. Cleish Castle.

11. H. *sabaúdum.* *P.* 8, 9. (Y.) E.-1. — Lower leaves ovate-lanceolate toothed, and with the stem hairy not glandular; invol. downy at base only.—Thickets and banks.

‖ Upper leaves not clasping.
¶ Invol. hairy, or pubescent.

12. H. *sylváticum.* *P.* 7, 8. (Y.) 12. — Radical leaves few or 0, stem leaves several, all with small, sharp teeth pointing forwards, somewhat hairy.—Woods, banks, walls.
β. *maculátum.* — leaves ovate-lanceolate, with large teeth, and purple spots.
γ. *pseudo-pictum.* — leaves lanceolate, spotted and clouded with purple.

13. H. *rigidum.* *P.* 6-8. (Y.) E. S.-1. — Leaves ovate-lanceolate, coarsely toothed in middle, hairy beneath; stem scabrous; base of invol. pubescent.—Walls and banks.
β. *angustifólium.* — stem slender; leaves lanceolate, with 2 or 3 teeth on each side.
γ. *pictum.* — upper leaves linear-lanceolate, remotely toothed, or entire, spotted and clouded with purple.

14. H. *denticulátum.* *P.* 7, 8. (Y.) S-1. — Leaves elliptic-lanceolate, finely toothed, nearly glabrous; ped. and invol. glandular-hairy.—Woods.

¶ Invol. smooth. Heads corymbose.

15. H. *boreále.* *P.* 8, 9. (Y.) E. S.-17. — Invol. of 3 rows of adpressed bracts; leaves ovate-lanceolate, sinuate-dentate, or nearly entire.—Thickets.

16. H. *umbellátum.* *P.* 8, 9. (Y.) 15. — Invol. of several rows of bracts, with recurved points; leaves linear-lanceolate, toothed or entire.—Thickets.
β. *Táylori.* — leaves lanceolate, upper part of stem, ped., and invol. with a stellate pubescence.

Tr. V. *LACTUCIDÆ. Receptacle generally naked. Pappus filiform, never feathery or dilated at base, generally unequal, silvery, very soft, fugaceous.*

6. LACTU'CA. *L.* Lettuce.

Invol. cylindrical with few flor., imbricated in 2-4 rows of bracts with membranous edges, the outer shorter. Fruit produced into a long or short beak bearing the pappus.

* Florets 5; midrib of leaves smooth below; fruit with a short beak.

1. L. *murális.* *P.* 7. (Y.) E. I.-10. — Leaves lyrate-pinnatifid, toothed, terminal lobe angled. heads panicled.—Old walls.

* Florets more than 5; midrib of leaves prickly below; fruit long-beaked.

2. L. *salígna.* *B.* 7, 8. (Y.) E.-1. — Upper leaves linear, entire, with sagittate bases, the lower pinnatifid; beak twice the length of fruit; heads almost spiked.—Chalky places near the sea.

3. L. *virósa.* *B.* 8, 9. (Y.) E. S.-10. — Leaves horizontal, oblong, auricled, mucronate-dentate, or sinuate; beak equalling fruit; heads panicled.—Dry places.

4. L. *scaríola.* *B.* 8. (Y.) E.-1. — Leaves upright, lanceolate, sagittate, sinuate, ciliate-dentate; beak equalling fruit; heads in leafy panicles.—Waste places.

7. TARA'XACUM. *Juss.* Dandelion.

Invol. of an inner row of erect bracts, and an outer of short lax ones. Fruit muricated, abruptly contracted into a long filiform beak bearing the pappus.

1. T. *officinále.* Leaves runcinate, glabrous, toothed; outer bracts linear, de-
P. 3-10. (Y.) 20. flexed; fruit with scaly points at its summit.—*Passim.*
β. *lævigátum.* outer bracts erecto-patent; leaves runcinate-pinnatifid, with unequal teeth.
γ. *erythrospérmum.* outer bracts adpressed or patent; leaves same as last, with intermediate teeth, the lowest ones sometimes entire.—Dry places.
δ. *palústre.* outer bracts adpressed, ovate, acuminate; leaves oblong, entire, or as last.—Bogs.

8. SO'NCHUS. *L.* Sow-thistle.

Invol. tumid at base, imbricated in 2 rows of unequal, at length connivent bracts. Fruit compressed, truncate. Pappus sessile.

* Invol. glabrous; leaves undivided, pinnatifid, or runcinate, toothed, clasping. Stem branched. Heads subumbellate.

1. S. *oleráceus.* Leaves with spreading, sagittate auricles, the lower stalked;
A. 6-8. (Y.) 20. fruit longitudinally ribbed, smooth.—*Passim.*
2. S. *ásper.* Leaves with rounded auricles, the lower sessile; fruit lon-
A. 6-8. (Y.) 20. gitudinally ribbed, rugose transversely.—*Passim.*

* Invol. and ped. glandular-hispid; leaves lanceolate, runcinate, uppermost entire and simple.

3. S. *palústris.* Leaves all sagittate at base, spinosely ciliated, the lower
P. 7, 8. (—Y.) E. S.-6. runcinate-pinnatifid.—Marshy places.
4. S. *arvénsis.* Leaves cordate at base, oblong-lanceolate, denticulate;
P. 8, 9. (Y.) 20. lower sinuate-runcinate.—Corn fields.

9. MULGE'DIUM. *Cass.*

Invol. double, inner of 1 row of bracts, outer short, lax, imbricated. Fruit compressed, constricted above and terminating in a ciliated disk.

1. M. *alpínum.* Ped. and invol. glandular-hispid, racemose; leaves gla-
P. 8. (B.) S.-1. brous, lyrate-sagittate, with a large terminal lobe.—Clova mountains.

10. CRE'PIS. *L.* Hawk's-beard.

Invol. of an inner row of bracts, and an outer of short lax ones. Fruit terate, striate, narrowing upwards, but hardly beaked.

* Leaves of stem sagittate or cordate at base, and clasping.

1. C. *púlchra.* Lower leaves obovate-oblong, downy, toothed; outer bracts
A. 6-9. (Y.) S.-1. ovate, short, adpressed; fruit equalling pappus.—Turin, Forfarshire.
2. C. *vírens.* Lower leaves runcinate or pinnatifid, toothed, glabrous,
A. 6-9. (Y.) 19. upper linear with flat margins; outer scales of hispid invol. linear, adpressed; fruit shorter than pappus.—Dry places.
3. *paludósa.* Lower leaves ovate-oblong, toothed, glabrous, upper lan-
P. 7-9. (Y.) 10. ceolate, acuminate; outer bracts of the glandular pilose invol. oblong-ovate; fruit truncate, equalling pappus.—Moist places.

* Leaves of stem not sagittate or cordate at base.

4. C. *succisæfólia.* Lower leaves oblong, obtuse, entire, nearly glabrous; fruit
P. 7, 8. (Y.) E. S.-2. narrowing upwards, as long as pappus, which is shorter than invol.—Woods.

5. C. *biénnis.* Lower leaves runcinate-pinnatifid, rough, with toothed
B. 7-9. (Y.) E.-2. lobes; fruit beaked, longer than pappus, which is longer than invol.—Chalky places.

11. BARKHAU'SIA. *Mœnch.*

Invol. oval, of an inner row of bracts, with an outer of short lax ones. Fruit terate, narrowing into a subulate beak, bearing the pappus.

1. B. *taraxacifólia.* Heads erect; stem angular, furrowed; invol. bristly and
B. 6, 7. (Y.) E.—? downy, covering half the pappus, its outer bracts with a membranous margin; fruits all equally beaked; leaves rough, runcinate-pinnatifid.—Limestone districts.

2. B. *fœ'tida.* Unopened heads nodding; stem round; invol. hairy and
B. 6, 7. (Y.) 2. downy, as long as pappus, outer bracts herbaceous; central fruits long-beaked; leaves as last.—Chalky places.

Tr. VI. *SCORZONERIDÆ. Receptacle without scales. Pappus feathery, often dilated at base, on the external fruits often scaly.*

12. LEO'NTODON. *L.*

Invol. with 1-3 rows of short external bracts. Fruit scarcely beaked. Pappus in 2 rows, outer short, setaceous, inner feathery.

1. L. *hírtum.* Throat of cor. hairy on the outside; leaves lanceolate,
P. 7, 8. (Y.) 16. sinuate-dentate, somewhat hispid with forked hairs; scape 1-headed, and with invol., glabrous.—Gravelly commons.

β. *dúbium.* leaves nearly entire; invol. hairy.

2. L. *hispidum.* Throat of cor. not hairy; leaves oblong-lanceolate, runci-
P. 6-9. (Y.) S. E.-20. nate, hispid as last; scape 1-fl'd, and with invol. hairy. Pastures.

13. OPORI'NIA. *Don.* Hawkbit.

Invol. imbricated in many adpressed rows of lessening bracts. Fruit transversely rugose. Pappus in 1 row, dilated at base.

1. O. *autumnále.* Leaves lanceolate, toothed or pinnatifid, smoothish; scape
P. 8. (Y.) 20. branched; ped. swollen beneath the somewhat downy invol.—Pastures.

β. *taráxaci.* leaves glabrous; stalk often simple; invol. shaggy, with blackish hairs.

14. PI'CRIS. *L.*

Invol. of 1 row of equal bracts and lax linear ones at base. Fruit transversely striated, not beaked. Pappus in 2 rows, the outer sub-pilose.

1. P. *hieracioídes.* Stem branching, rough, with hooked bristles; leaves lan-
B. 7, 8. (Y.) E. I.-12. ceolate, rough, dentate; ped. corymbose, with many bracts.—Dry banks.

15. TRAGOPO'GON. *L.* Goat's-beard.

Invol. of 1 row of 8-10 bracts connected at base. Fruit longitudinally striated, with a long beak bearing the copious pappus.

1. T. *praténsis.* *B.* 6, 7. (Y.) 10? — Ped. nearly cylindrical; invol. equal to, or shorter than flor.; leaves entire, glabrous, acuminate, channelled.—Meadows.
β. *minor.* — invol. longer than flor.
2. T. *porrifólius.** *B.* 6. (P.) E. S.-3. — Ped. much thickened upwards; invol. longer than flor.; leaves as last.—Moist places.

16. HELMI'NTHIA. Ox-tongue.

Invol. of 2 rows the inner of 8 close, equal bracts, the outer of 5 large, lax, leafy ones. Fruit transversely striated, with a slender beak bearing the copious pappus.

1. H. *echioides.* *A.* 7-9. (Y.) E. I.-15. — Outer bracts of invol. 5, cordate, somewhat spiny; plants hispid, 3-headed, with rigid and hooked hairs arising from tubercular bases.—Dry banks.

SECTION II.—TUBULIFLORÆ.

Perfect florets tubular, equally 5-rarely 4-toothed.

SUB-ORDER II.—CYNARINÆ. Style of the perfect flor. thickened beneath its branches, and often fringed at the tumour. Throat of cor. swollen.

Tr. VII. *CARLINIDÆ. Heads many flowered, never diœcious. Fil. distinct, smooth. Fruit villose. Pappus rarely in more than 1 row, not surrounded by a prominent margin.*

17. CARLI'NA. *L.* Carline-thistle.

Invol. with the outer bracts herbaceous, spiny, lax; the inner scaly, coloured, spreading like a ray. Receptacle chaffy. Pappus feathery. Anth. appendaged at base.

1. C. *vulgáris.* *B.* 7-10. (—R.) 16. — Stem 1-or many-headed, covered with a cottony web; leaves lanceolate, unequally spiny, sinuated, downy beneath. Invol. with radiating, white scales.—Dry heaths.
2. C. *racemósa.* *P.* 8. (—R.) I.-1. — Stem many-headed corymbose, nearly glabrous; leaves lanceolate, spiny, sinuated glabrous; invol. radiating, with yellow scales.—Gt. Arran Isle.

18. SAUSSU'REA. *De C.*

Invol. oblong, unarmed. Receptacle bristly or chaffy. Anth. ciliated at base. Pappus double, not surrounded by a margin; outer of short rough bristles; inner, feathery.

1. S. *alpína.* *P.* 8. (P.) 1. — Leaves toothed, cottony beneath, lanceolate, the lowest ovate-lanceolate; heads few in a dense corymb.—Alpine rocks.

Tr. VIII. *CENTAURIDÆ. Flor. numerous; the outer ones usually neuter, enlarged, and irregular. Pappus sessile in many rows, of different lengths; second row longest, pilose-setaceous, placed within the margin which surrounds the epigynous disk, rarely wanting.*

19. CENTAU'REA. *L.* Knapweed, Bluebottle, Startwort.

Invol. imbricated. Outer flor. spreading, neuter; longer than the inner, perfect ones. Receptacle bristly. Pappus pilose or 0.

* Invol. spinous,

1. C. *Isnárdi.* *P.* 7, 8. (P.) C. — the spines palmate; lower leaves somewhat lyrate, scabrous, toothed and slightly decurrent, upper linear; heads terminal solitary.—Pastures, Guernsey.

2. E. *Calcítrapa.* *A.* 7, 8. (P.) E.-6. — Bracts of invol. spinulose at base, with a long terminal broad spine; leaves deeply pinnatifid, spinosely toothed, not decurrent; heads lateral sessile.—Sandy places.

3. C. *solstitialis.** *A.* 7, 8. (Y.) E. I.-1. — Bracts spinulose at base with a long, terminal, slender spine; leaves lyrate-pinnatifid, the upper lanceolate decurrent; heads terminal solitary.—Fields.

* Invol. not spinous,

† the outer bracts with a scarious, not decurrent appendage,

4. *C. Jácea.* *P.* 8, 9. (P.) 2. — which is pinnatifid, and entire or torn in the inner bracts; pappus 0; lower leaves lanceolate toothed.—Groves.

5. C. *nígra.* *P.* 8, 9. (P. *v.* W.) 20. — Appendage to the bracts finely pectinated in all but the innermost; pappus very short, tufted; lower leaves sublyrate.—Pastures.

β. nígrescens. — outer flor. radiant.

† Bracts of invol. with a scarious deeply toothed or fringed decurrent margin,

6. C. *Cýanus.* *P.* 7, 8. (P.) 19. — their margin serrated; leaves linear entire, the lowest toothed, cottony below, slightly so above.—Corn fields.

7. C. *scabiósa.* *P.* 7-9. (P.) 17. — Margin of bracts ciliated, downy; leaves pinnatifid roughish, the segments lanceolate acute.—Corn fields. Hedges.

Tr. IX. *SILYBIDÆ. Fil. united. Pappus in many rows.*

20. SÍ'LYBUM. *Gærtn.* Milk-thistle.

Invol. imbricated; bracts leafy, terminating in a long, spreading, spinous point. Receptacle scaly. Pappus pilose, cohering into a ring at base, deciduous.

S. *Mariánum.* *B.* 6, 7. (P.) 15. — Leaves clasping, waved, spinous, with whitish veins, the radical ones pinnatifid; invol. with recurved, spinous bracts.—Waste places.

Tr. X. *CARDUIDÆ. Flor. all tubular. Invol. in many rows of distinct, spinous bracts. Fil. distinct papillose. Pappus in many rows, not surrounded by a margin.*

21. CA'RDUUS. *L.* Thistle.

Spines of invol. straight. Receptacle with fimbriated scales. Fruit compressed. Pappus pilose or feathery, united into a ring at base, deciduous.

* Stem winged by the decurrent bases of the leaves,

† and hairy; leaves pinnatifid, hairy above,

1. C. *lanceolátus.* *B.* 7, 8. (P.) 20. — white and cottony beneath; heads 1 or 2, stalked; invol. shaggy, the bracts lanceolate, spreading, spinous.—Waste ground.

2. C. *palustris.* *A.* 7, 8. (P. *v.* W.) 20. — Leaves not white or cottony beneath; heads in terminal clusters, nearly sessile; invol. almost glabrous with ovate-lanceolate, adpressed, mucronate bracts.—Wet meadows.

† Stem not hairy, generally cottony; leaves sinuate or pinnatifid,

3. C. *nútans.* *A.* 7, 8. (P.) 17. — hairy beneath; heads stalked, solitary, drooping; bracts lanceolate, cottony, outer ones spreading.—Waste ground.

4. C. *acanthoides.* Leaves nearly glabrous (or woolly) beneath; heads shortly
B. 6, 7. (P.) 19. stalked, mostly clustered; bracts linear-subulate, erect or ascending.—Waste places.

5. C. *tenuiflórus.* Leaves cottony beneath: heads sessile, clustered, cylin-
A. 6, 7. (R.) 15. drical; bracts, ovate-lanceolate, attenuated.—Sandy ground.

* Stem not winged, its leaves sessile, scarcely if at all decurrent.

† Leaves pinnatifid, spinous,

‡ hispid, or more or less pilose above, white and cottony beneath. Stem branched.

6. C. *eriophorus.* Heads solitary, terminal: invol. globose, shaggy: bracts
B. 8. (B.) 10. lanceolate, with a spinous point; leaves all sessile, the segments pointing alternately up and down.—Limestone soil.

7. C. *tuberósus.* Heads 1-3; invol. ovate, slightly cottony, the bracts lan-
P. 8. (P.) E. 1. ceolate, mucronate: lower leaves on long stalks, wavy, none decurrent.—Great Ridge, Wiltshire Downs.

8. P. *Fórsteri.* Heads 2-3, terminal; invol. ovate, slightly cottony, bracts
P. 7, 8. (P.) E. L.-2. as last; lower leaves stalked, upper slightly decurrent.—Boggy places.—Surrey. Sussex. Garvagh, Derry.

‡ Leaves glabrous above, not white or cottony beneath.

9. C. *arvénsis.* Leaves oblong-lanceolate; stem branching; invol. glabrous-
P. 7. (P. *v.* W.) 20. bracts oval-lanceolate, adpressed, with a spreading mucro.—Way-sides.

β. *latifólius.* leaves oblong, broad, lobes decurrent, spinous, ciliated.

10. C. *acaúlis.* Leaves lanceolate; stem 0; invol. glabrous, outer bracts
P. 7-9. (P.) ovate, inner narrow, blunt.—Dry pastures.

β. *Gibsoni.* having a single short leafy stem.

† Leaves undivided or lobed, spinosely ciliated subglabrous, or cottony beneath.

11. C. *heterophýllus.* Stem cottony, branching; leaves clasping, lanceolate, ser-
P. 7, 8. (P.) E. S.-8. rated, glabrous above, the lower stalked; bracts of invol. not mucronate.—Moist pastures.

12. C. *praténsis.* Stem cottony, not branching; leaves sessile, lanceolate,
P. 6-8. (—P.) 10. wavy, pilose above, the lowest stalked; bracts of invol. mucronate.—Wet meadows.

β. *pseúdo-Forsteri.* stem with 2 or 3 single-headed branches.

13. C. *setósus.* Stem glabrous; leaves oblong, lanceolate, obtusely sinuate, glabrous above; bracts of invol. not mucronate.—Dumfermline, Fifeshire.

22. ONOPO'RDUM. *L.* Cotton-thistle.

Spines of invol. straight. Receptacle alveolate. Fruit 4-ribbed. Pappus pilose, rough, cohering into a ring at base.

1. O. *Acánthium.* Leaves ovate-oblong, sinuated, spinous, decurrent, woolly
B. 7-8. (P.) E. S.-14. on both sides; bracts of invol. subulate, spreading.—Roadsides.

23. A'RCTIUM. *L.* Burdock.

Invol. globose, the spinous bracts terminating in hooked points. Receptacle with rigid, subulate scales. Fruit 4-sided. Pappus short, pilose, distinct below.

1. A. *Láppa.* Heads sub-corymbose; leaves cordate, stalked; invol.
B. 7, 8. (P.) 18. nearly glabrous; inner bracts with hooked points.—Waste places.
β. *Bardána.* invol. with a cottony web; bracts often not hooked, and coloured purple.

Tr. XI. *SERRATULIDÆ. Flor. numerous in the heads, perfect, or diœcious; the external row sometimes having pistils only. Fil. distinct. Pappus in many rows, the inner longest, surrounded by a margin.*

24. SERRA'TULA. *L.* Saw-wort.

Heads diœcious. Invol. imbricated with sharp, unarmed bracts. Receptacle bristly. Fruit obovate. Pappus in 3-4 rows, the inner longest.

1. S. *tinctória.* Leaves pinnatifid, somewhat lyrate, finely serrated; heads
P. 8. (P.) 15. oblong, corymbose; outer bracts of invol. ovate, adpressed, the inner linear, coloured.—Thickets.

SUB-ORDER II.—ASTERINÆ. Style cylindrical; its branches linear, flat on the outside, equally and finely downy on the inside. Stigmatic lines narrow, prominent.

Tr. XII. *ASTERIDÆ. Heads never diœcious, mostly radiant. Receptacle naked or alveolate. Anthers not appendaged. Leaves alternate or radical.*

25. BE'LLIS. *L.* Daisy.

Invol. hemispherical in 2 rows of equal obtuse bracts. Receptacle conical. Fruit compressed. Pappus 0.

1. B. *perénnis.* Leaves spathulate-obovate, single-ribbed crenate-dentate;
P. 3-10. (W. Y.) 20. scape single-headed.—Meadows.

26. A'STER. *L.* Starwort. Michaelmas daisy.

Invol. imbricated with a few bracts on ped. Flor. of ray ligulate, pistilliferous, in 1 row; of the disk perfect. Pappus pilose in many rows.

1. A. *Tripólium.* Stem glabrous, corymbose; leaves linear-lanceolate, fleshy;
P. 8, 9. (B. Y.) 11. invol. of lanceolate, obtuse, imbricated bracts.—Salt marshes.

27. ERI'GERON. *L.* Flea-bane.

Invol. imbricated; ped. naked. Flor. of ray very narrow, pistilliferous, in many rows; of the disk mostly perfect. Pappus pilose in many rows.

2. E. *ácre.* Stem branching, hispid, branches alternate, 1-headed;
B. 7, 8. (P. Y.) 12. leaves lanceolate obtuse; ray erect as long as disk. Gravelly places.
1. E. *Canadénse.** Stem branching hairy; heads many, panicled; lower
A. 8, 9. (—Y.) E.-1. leaves linear-lanceolate.—Waste ground.
3. E. *alpínum.* Stem not branching, 1-3-headed; leaves lanceolate, ray
P. 7, 8. (P. Y.) E. S.-1. spreading, twice as long as disk.—Mountainous places.
β. *uniflórum.* stem 1-headed; ray erect; invol. woolly.

28. CHRYSOCO'MA. *L.* Goldilocks.

Flor. all tubular, perfect, 5-fid. Invol. in 1 row of leafy bracts. Receptacle alveolate. Fruit compressed, silky. Pappus pilose, in 2 rows.

1. C. *Linosýris.* *P.* 8, 9. (Y.) — Herbaceous; leaves linear, glabrous; heads corymbose; 3. bracts of invol. loosely spreading.—Limestone cliffs.

29. SOLIDA'GO. *L.* Golden-rod.

Ray of 5-15 pistilliferous flor. Invol. closely imbricated, oblong, scabrous. Receptacle naked. Fruit terate. Pappus pilose, rough, in 1 row.

1. S. *Virgaúrea.* *P.* 7-9. (Y.) — Leaves lanceolate, the lower elliptical; heads in erect 20. downy crowded panicles.—Woods.
β. *cámbrica.* — small; leaves ovate-lanceolate.

Tr. XIII. *INULIDÆ. Heads never diœcious; generally with a ray of pistilliferous flor. Anth. with appendages. Receptacle naked.*

30. I'NULA. *L.* Elecampane.

Invol. imbricated in many rows. Flor. of ray mostly ligulate, pistilliferous only. Pappus pilose, in 1 row.

1. I. *Conýza.* *P.* 7-9. (Y.) E.-12. — Bracts of invol. linear; leaves pubescent, ovate-lanceolate, serrated, lower stalked, upper entire.—Chalky soil.
2. I. *crithmoides.* *P.* 7, 8. (Y.) 2. — Bracts linear; leaves glabrous, fleshy, linear, obtuse 3-toothed at end.—Sea cliffs.
3. I. *Helénium.* *P.* 7, 8. (Y.) 12. — Bracts ovate or obovate, reflexed, downy; leaves not clasping, downy beneath, unequally toothed.—Moist pastures.

31. PULICA'RIA. *Gærtn.* Flea-bane.

Invol. loosely imbricated in a few rows. Flor. of ray mostly ligulate, pistilliferous only. Pappus double; outer short, cup-like, membranous, toothed; inner pilose, rough.

1. P. *dysentérica.* *P.* 8, 9. (Y.) 15. — Leaves oblong, even, with a cordate, clasping base, downy beneath; flor. of ray much longer than those of disk.—Moist places.
2. P. *vulgáris.* *A.* 8, 9. (Y.) E.-5. — Leaves lanceolate, wavy, with a narrow, clasping base, downy beneath; flor. of ray about as long as those of disk.—Sandy places.

SUB-ORDER III.—EUPATORINÆ. Style cylindrical, with long, slightly clavate branches, which are papillose on the outer surface near the end.

Tr. XIV. *EUPATORIDÆ. Heads with the flor. all perfect. Pappus pilose, rough.*

32. EUPATO'RIUM. *L.* Hemp-agrimony.

Heads mostly few-fl'd. Invol. imbricated, oblong. Receptacle naked. Styles much exserted. Pappus in 1 row, pilose rough.

1. E. *cannabinum.* *P.* 7, 8. (P.) 20. — Leaves opposite, in 3-5 deep, lanceolate, serrated segments, the middle one longest; flor. 5-6.—River banks.

Tr. XV. *TUSSILAGIDÆ.* *Heads almost diœcious,* (33); *or outer flor. pistilliferous only, inner perfect,* (34).

33. PETASI'TES. *Desf.* Butter-bur.

Heads numerous, nearly diœcious, without a ligulate ray. Invol. imbricated in 2 rows of lanceolate bracts. Pappus pilose.

1. P. *vulgáris.* Leaves cordate-roundish, unequally toothed, 3-ribbed at base;
P. 4. (—P.) 20. heads in a dense, oblong thyrsus.—Wet places.

34. TUSSILA'GO. *L.* Colt's-foot.

Heads solitary, with a ray of numerous, ligulate, pistilliferous flor. Invol. of 1 row of equal bracts. Pappus pilose.

T. *Fárfara.* Scape imbricated with scales; leaves appearing after the
P. 3, 4. (Y.) 20. fl., cordate-angular, toothed.—Moist soil.

SUB-ORDER V.—SENECIONINÆ. Style cylindrical; its branches long, linear, terminating in a bunch or fringe of hairs, beyond which sometimes extends an appendage.

Tr. XVI. *HELIANTHIDÆ.* *Heads usually radiant, and with perfect flor.: or discoid and with diclinous flor. Anth. not appendaged. Receptacle paleaceous, at least near the margin.*

35. BI'DENS. *L.* Bur-marigold.

Invol. of many bracts; the outer ones often leafy. Receptacle flat, paleaceous. Fruit compressed, with rough angles, and bearing 2-5 retrosely hispid bristles.

1. B. *cérnua.* Heads drooping; leaves undivided, sessile, lanceolate, ser-
A. 8, 9. (—G.) 20. rated.—Watery places.
β. *coreópsis.* heads with radiant, marginal flor.
2. B. *tripartíta.* Heads slightly drooping; leaves 3-parted, stalked, seg-
A. 7. (Y.) 16. ments lanceolate, deeply serrated.—Marshy places.
γ. *radiáta.* marginal flor. radiant, 3-toothed.

Tr. XVII. *SENECIONIDÆ.* *Heads with perfect or separate flor., radiant or discoid. Anth. not appendaged. Pappus pilose or setaceous, rarely* 0.

36. CINERA'RIA. *L.* Flea-wort.

Heads radiant. Invol. cylindrical, of 1 row of equal, erect bracts, with scarious margins. Receptacle naked. Pappus pilose.

1. C. *campestris.* Woolly; stem simple; leaves of root oval, nearly entire,
P. ? 5, 6. (Y.) E.-3. of stem lanceolate; heads 1-6, umbellate.—Chalk downs.
β. *marítima.* heads numerous; lower leaves toothed.—Holyhead.
2. C. *palústris.* Shaggy; stems much branched; leaves broadly lanceolate
P. 6, 7. (Y.) E.-2. sinuate-dentate, clasping; heads corymbose.—Wet places.

37. SENE'CIO. *L.* Groundsel. Ragweed.

Heads often not radiant. Invol. of 1 row of equal bracts with small unequal ones at base, becoming reflexed and black at their tips. Receptacle naked. Pappus pilose.

* [1] Heads without a ray.

1. S. *vulgáris.* Leaves clasping, pinnatifid, toothed; the lower narrowing
A. 3-10. (Y.) 20. into a stalk; heads corymbose.—Waste places.

* [2] Heads with a revolute ray. Leaves deeply pinnatifid, segments oblong, unequally toothed.

2. S. *viscósus.* Stem diffuse; leaves viscid; invol. viscid, outer bracts
A. 7-9. (Y.) 10. half as long as inner; fruit glabrous.—Waste places.

3. S. *sylváticus.* Stem erect, straight; leaves downy, not viscid; invol.
A. 7-9. (Y.) 20. downy, outer bracts very short; fruit silky.—Dry hills.

* [3] Ray spreading, not revolute.

† Lower leaves divided. Fruit hairy or silky.

‡ Leaves all sessile,

4. S. *squalidus.* pinnatifid, glabrous, with distant, oblong, toothed segments;
A. 6-10. (Y.) E.-1. invol. glabrous, bracts few, small.—Walls. Oxford. Devon.

‡ Lower leaves stalked,

5. S. *tenuifólius.* all pinnatifid, downy, especially beneath, margins revolute,
P. 7, 8. (Y.) 15. segments close, linear; stem cottony.—Chalky soil.

6. S. *Jacobæ'a.* Leaves lyrate, bipinnatifid, glabrous, flat, segments spread-
P. 7-9. (Y.) 20. ing, deeply toothed; stem smooth.—Waste places.

† Lower leaves undivided,

‡ stalked, obovate, crenate or toothed.

6. S. *aquáticus.* Upper leaves lyrate, serrated, glabrous; fruits all glabrous;
P. 7, 8. (Y.) 15. invol. hemispherical; stem corymbose.—River sides.

‡ Leaves all sessile. Bracts subulate or setaceous.

7. S. *paludósus.* Leaves oblong-lanceolate, clasping, sharply serrate, woolly
P. 5-7. (Y.) E.-1. beneath; stem straight, hollow, woolly.

8. S. *Saracénicus.* leaves lanceolate, acute, sessile, minutely serrated, glabrous;
P. 8. (P.) 7. stem erect, solid, glabrous.—Watery places.

38. DORO'NICUM. *L.* Leopard's-bane.

Heads radiant. Invol. in a double row of nearly equal bracts. Receptacle almost naked. Pappus pilose, 0 in the ray.

1. D. *Pardaliánches.** Leaves cordate, toothed, lowest on long stalks, inter-
P. 5-7. (Y.) 6. mediate with clasping, auricled petioles, upper sessile, clasping.—Pastures.

2. D. *plantagíneum.* Leaves toothed, radical ones ovate, on long-stalks, those of
P. 6, 7. (Y.) E. S.-1. stem sessile, clasping, the lower with a winged and auricled stalk, upper ovate-acuminate.—Damp places.

Tr. XVIII. *GNAPHALIDÆ. Heads with separate or perfect flor., without a ray. Anth. with appendages. Styles truncate. Pappus pilose or setaceous.*

39. FILA'GO. *L.*

Invol. imbricated, conical, of a few lanceolate, scarious bracts. Outer flor. filiform intermixed with inner bracts of invol. Pappus pilose, caducous.

1. F. *Gállica.* Downy; stem erect, dichotomously branched; leaves re-
A. 7, 8. (—Y.) E.-1. volute, linear-acuminate, longer than the dense, axillary clusters of subulate heads.—Gravelly places.

2. F. *minima.* Cottony; stem as last; leaves flat, linear-lanceolate, acute,
A. 6-9. (—Y.) 19. shorter than the axillary or terminal clusters of conical heads; bracts bluntish.—Sandy ground.

3. F. *Germánica.* Cottony; stem erect, proliferous at summit; leaves lanceo-
A. 7-9. (Y.) 20. late, wavy; heads in axillary and terminal, globose clusters; bracts cuspidate.—Sandy fields.

40. GNAPHA'LIUM. *L.* Cudweed.

Sometimes diœcious. Invol. hemispherical, scarious, often coloured. Flor. tubular, not intermixed with bracts of invol. Pappus pilose or clavate.

* Heads diœcious (ANTENNARIA); bracts of invol. white or rose-coloured.

1. G. *dioícum.* Shoots procumbent; flowering stems simple; root-leaves
P. 6, 7. (Y.) 13. cottony beneath.—Mountain heaths.
β. *hyperbóreum.* leaves cottony on both sides.
2. G. *margaritáceum.** Stem erect, branching above; leaves linear-lanceolate, acute,
P. 8. (—Y.) 1. cottony beneath.—Moist meadows.

* Heads with perfect flor. (GNAPHALIUM); bracts coloured at edges.

† [1] Stem branching only at base; flor. conspicuous; heads in dense, leafless tufts.

3. G. *lúteo-álbum.* Leaves linear-oblong, waved, clasping, woolly on both
A. 7, 8. (Y.) E.-2. sides.—Cambridgeshire. Norfolk.

† [2] Stem diffusely branched, cottony; flor. inconspicuous; heads in dense, terminal clusters,

4. G. *uliginósum.* shorter than the surrounding, linear-lanceolate leaves, which
A. 7, 8. (Y.) 20. are cottony on both sides.—Sandy places.

† [3] Stem generally simple; flor. inconspicuous; heads spiked or solitary.

5. G. *sylváticum.* Spike leafy, interrupted, formed of axillary clusters, slightly
P. 7-9. (W.) 16. branched; leaves linear-lanceolate, woolly on both sides.—Thickets.
β. *réctum.* leaves glabrous above.
6. G. *supínum.* Spike terminal, capitate, of few heads; leaves linear-oblong,
P. 7. (W.) S.-1. downy on both sides.—Mountains.
β. *pusíllum.* stem cæspitose; heads 1-5, scattered.

Tr. XIX. *ANTHEMIDÆ. Heads usually with a ray of ligulate, pistilliferous or neuter flor. Anth. not appendaged. Branches of style usually truncate. Pappus often wanting, mostly membranous, rarely scaly or pilose.*

41. CHRYSA'NTHEMUM. *L.* Ox-eye. Moon-daisy.

Invol. hemispherical or nearly flat; the scales imbricated, with membranous edges. Receptacle naked, convex or flat. Pappus 0, or crown-like.

* Fruit not crowned by pappus. (CHRYSANTHEMUM.)

1. C. *Leucánthemum.* Lower leaves stalked, obovate, those of stem clasping, ob-
P. 6, 7. (W. Y.) 20. long, obtuse, cut, pinnatifid at base, green.—Fields and banks.
2. C. *ségetum.* Leaves all sessile, upper clasping, inciso-serrate above,
A. 6-8. (Y.) 20. toothed at base, glaucous.—Corn fields.

* Fruit crowned by a membranous border. (PYRETHMUM.)

3. C. *Parthénium.* Heads corymbose; leaves stalked, pinnate, with ovate or
B. 6, 7. (W. Y.) 18. oblong pinnatifid leafl.—Waste ground.
4. C. *inodórum.* Heads solitary; leaves sessile, pinnatifid, in numerous ca-
A. 7, 8. (W. Y.) 20. pillary pointed segments.—Waste ground.
β. *maritimum.* leaves bipinnate, leafl. pointless.—Sea-shore.

42. A'NTHEMIS. *L.* Chamomile.

Invol. hemispherical or nearly flat, imbricated in a few rows of bracts with membranous edges. Receptacle chaffy, convex. Pappus 0 or membranous.

* Receptacle flat (1), or hemispherical (2).

1. A. *A'nglica.* *A.* 7. (W. Y.) E. I.-1. Stem prostrate; leaves pinnatifid, somewhat hairy and fleshy, lobes inciso-serrate, acute, bristle-pointed.—Sea-shore, Sunderland. Bearhaven.
2. A. *tinctória.* *P.* 7, 8. (Y.) E. S.-1. Stem erect; leaves bi-pinnatifid, cottony beneath, not fleshy, segments decurrent, serrated.—Banks of mountain streams.

* Receptacle conical, (3, 5.) or elongated (4.)

3. A. *arvénsis.* *A.* 6, 7. (W. Y.) 13. Leaves bi-pinnatifid hairy, segments linear-lanceolate; scales of receptacle lanceolate or oblong, with a rigid acute point.—Waysides.
4. A. *Cótula.* *A.* 7-9. (W. Y.) 16. Leaves bi-pinnatifid, nearly glabrous, segments subulate; scales of receptacle linear-setaceous, acute.—Waste places.
5. A. *nóbilis.* *P.* 7, 8. (W. Y.) E. I.-10. Leaves bi-pinnate, slightly downy, leafl. linear-subulate; scales of receptacle membranous, obtuse.—Dry places.

43. MATRICA'RIA. *L.* Wild-chamomile.

Invol. nearly flat, the bracts imbricated, without membranous edges. Receptacle very conical, naked. Pappus 0.

1. M. *Chamomílla.* *A.* 6, 7 (W. Y.) 16. Leaves pinnate, smooth; leafl. capillary, simple or divided; invol. with obtuse bracts.—Corn fields.

44. ACHILLÆ'A. *L.* Yarrow. Millefoil.

Invol. ovate, imbricated. Ray of 5-10 roundish ligulate flor.; the tube of the inner ones 2-winged. Receptacle flat, chaffy. Pappus 0.

* Leaves deeply divided, woolly,

1. A. *millefólium.* *P.* 6-8. (—W.) 20. bi-pinnatifid, outline lanceolate, segments linear, toothed, acute; bracts nearly glabrous.—Waste ground.
2. A. *tomentósa.** *P.* 7, 8. (Y.) S. I.-1. Leaves pinnatifid, outline linear-lanceolate, segments crowded, linear, acute, 2-3-fid.; bracts woolly.—Hills.

* Leaves linear-lanceolate, not pinnatifid,

3. A. *Ptármica.* *P.* 7, 8. (W.) 20. acute, shining, glabrous, uniformly and finely serrated, attenuated at base.—Moist pastures.
4. A. *serráta.* *P.* 9. (—Y.) E.-1. Leaves bluntish, downy, punctured, coarsely and doubly serrated, spreading, laciniate at base.—Somersetshire. Matlock.

45. DIO'TIS. *Desf.* Cotton-weed.

Invol. hemispherical, imbricated. Flor. all tubular, perfect, having 2 ears at base, which border the ov., and remain upon the fruit. Receptacle with fringed scales. Pappus 0.

D. *marítima.* *P.* 8, 9. (Y.) E.-9. Whole plant white, cottony; leaves sessile, oblong, obtuse, flat, crenate, persistent.—Sea shore.

46. TANACE'TUM. *L.* Tansy.

Invol. hemispherical, imbricated. Ray sometimes 0. Receptacle naked. Fruit angular, with a large epigynous disk, and membranous margin.

1. T. *vulgáre.* *P.* 7, 8. (Y.) 19. Leaves bi-pinnatifid, deeply serrated; heads in a terminal corymb.—Borders of fields.

47. ARTEMI'SIA. *L.* Wormwood. Southernwood.

Invol. roundish, imbricated, few-fl'd. Flor. of the ray, if any, slender subulate. Receptacle naked or hairy. Fruit obovate with a small epigynous disk. Pappus 0.

* Leaves with linear segments, bi-pinnatifid,

1. A. *campéstris.* *P.* 8, 9. (Y.) E.-1. silky beneath; heads drooping; invol. glabrous; stem twiggy, procumbent before flowering; receptacle naked.—Sandy heaths.
2. A. *maritima.* *P.* 8, 9. (—R.) 9. Leaves clothed with a whitish down; heads drooping; invol. woolly; stem ascending; receptacle naked.—Salt marshes.

β. *gállica.* heads erect.

* Leaves with lanceolate, entire (3), or cut and serrated (4) segments,

3. A. *Absínthium.* *P.* 7, 8. (Y.) 19. bi-pinnatifid, silky; receptacle hairy; heads hemispherical, drooping.—Waste ground.
4. A. *vulgáris.* *P.* 8, 9. (—R.) 20. Leaves pinnatifid, woolly, and white beneath; receptacle naked; heads ovate, almost erect.—Waste ground.

Tr. XX. *AMBROSIDÆ. Heads generally monœcious. Anth. distinct. Fil. united. Cor. of the pistilliferous flor. often absent, of the stameniferous ones tubular, 5 cleft. Pappus* 0.

48. XA'NTHIUM. *L.* Bur-weed.

Invol. of barren heads of 1 row of free bracts, containing numerous flor.; Receptacle scaly. Invol. of fertile heads of 1 prickly bract containing 2 flor. Cor. 0. Fruit enclosed in hardened invol.

1. X. *strumárium.** *A.* 8, 9. (G.) 1, Stem unarmed; leaves cordate, 3-lobed, coarsely toothed; fruit with 2 straight beaks.—Waste land.

ORDER II.—DIPSACEÆ.

Herbs with opposite leaves, destitute of any important properties. *Fl. in heads,* placed on a common receptacle, and *surrounded by an invol. Cal.* with a superior membranous or pappus-like limb, *surrounded by a scarious involucel* which closely invests the fruit. Cor. oblique. *Stam.* 4; *anth. free.* Fruit 1-celled, 1-seeded; *Embr. inverted,* straight, *in axis of a fleshy alb.*

Receptacle with spinous scales. Cal.-limb entire.	1. DIPSACUS.
Receptacle hairy. Cal.-limb with more than 5 ciliæ. . . .	2. KNAUTIA.
Receptacle scaly. Cal.-limb long, narrow, ending in 5 bristles. .	3. SCABIOSA.

1. DI'PSACUS. *L.* Teasel.

True cal. with a cup-shaped, entire limb. Involucel forming a thickened margin to ov. Receptacle spinous. Fruit 4-sided, with 8 depressions.

* Heads elongated; leaves sessile, undivided, upper connate; stem prickly.

1. D. *Fullónum.** Scales of receptacle hooked at the end; invol. spreading, as long as head.—Road sides and hedges.
B. 8, 9. (—P.) E.-1.

2. D. *sylvéstris.* Scales of receptacle straight at end; invol. curved upwards, longer than the heads.—Hedges and roadsides.
B. 7-9. (P.) 16.

* Heads globose; leaves petioled with lateral leafl.; stem rough.

3. D. *pilósus.* Scales of receptacle straight at end; invol. deflexed, shorter than the heads.—Moist woods.
B. 8, 9. (W.) E.-9.

2. KNA'UTIA. *L.*

True cal. cup-shaped, with radiating ciliæ. Involucel with 4 small teeth. Receptacle hairy. Fruit on a short stalk, compressed, with 4 sides and 4 depressions.

1. K. *arvénsis.* Stem bristly; involucel with very small teeth; cal. with 8-16 somewhat awned ciliæ; lower leaves simple, upper pinnatifid.—Pastures.
P. 7. (—P.) 19.

3. SCABIO'SA. *L.* Scabious.

True cal. with the limb narrowed, elongated, and bearing 5 bristles. Involucel membranous, plaited. Receptacle scaly. Fruit nearly cylindrical, with 8 depressions.

1. S. *succísa.* Cor. 4-cleft; involucel hairy, 4-fid. herbaceous; cal. with 5-bristles; stem-leaves toothed, upper mostly entire.—Pastures.
P. 7-10. (+B.) 13.

2. S. *columbária.* Cor. 5-cleft; involucel plaited, notched, membranous; cal. of 5 bristles; upper leaves pinnatifid.—Chalky soils.
P. 7, 8. (—P.) E. S.-19.

ORDER III.—VALERIANEÆ.

Annual or perennial herbs, with opposite exstipulate leaves, and possessing tonic, aromatic properties. Cal., the limb membranous, toothed, or an irregular, feathery pappus, often obsolete. *Cor.* tubular, irregular, 3-5-lobed, *often gibbous, or spurred at base. Stam.* 1-5 *free. Ov. with* 1 *perfect, and sometimes* 2 *other abortive cells.* Fruit dry, indehescent. *Seed* 1, *pendulous;* embr. straight; alb. 0; rad. superior.

Cor. spurred.	Fruit crowned with feathery pappus.	1. CENTRANTHUS.
Cor. not spurred.	Fruit crowned with feathery pappus. . . .	2. VALERIANA.
Cor. not spurred.	Fruit crowned with teeth.	3. VALERIANELLA.

1. CENTRA'NTHUS. *De C.*

Cor. 5-lobed, spurred at base. Stam. 1. Fruit 1-celled, crowned with a feathery pappus.

1. C. *rúber.** Leaves ovate-lanceolate; spur shorter than tube of cor., longer than ov.—Chalk-pits. Old walls.
P. 6-9. (R.) 6.

2. C. *calcitrapa.** Radical leaves ovate; stem leaves pinnatifid. Spur very short.—Eltham, Kent.
P. 7. E.-1.

2. VALERIA'NA. *L.* Valerian.

Cor. 5-lobed, not spurred. Stam 3. Fruit 3-celled; 2 of the cells empty, inflated, or reduced to filiform ridges; crowned with the erect, unequal teeth of cal.

* Flowers diœcious; cor. gibbous at base.

1. V. *diœica.* Root-leaves ovate, stalked; those of stem pinnatifid, with a large terminal lobe; stem simple.—Moist places.
P. 6. (—R.) P. S.-17.

* Fl's. perfect; cor. gibbous at base.

2. V. *officinális.* *P.* 6, 7. (—R.) 20. Leaves all pinnate, stalked; leafl. lanceolate, serrated, all of equal size.—Moist places.

3. V. *Pyrenáica.** *P.* 6, 7. (—R.) S.-3. Leaves cordate, serrate, stalked, the uppermost with 1 or 2 pairs of small, lanceolate leafl.—Woods.

3. VALERIANE'LLA. *Tourn.* Lamb's-lettuce. Corn-salad.

Cor. 5-lobed, not spurred. Stam. 3. Fruit 3-celled; 2 of the cells empty, inflated, or reduced to filiform ridges; crowned with the erect, unequal teeth of cal.

* Fruit with 1 fertile, and 2 barren cells; bracts ciliated; fl. capitate.

1. V. *olitória.* *A.* 5, 6. (—B.) 20. Fruit crowned with 3 minute, inflexed teeth, compressed, oblique, cells not ribbed; leaves ovate-spathulate.—Banks.

2. V. *carináta.* *A.* 4-6. (—B.) E. S.-1. Fruit crowned with 1 straight tooth, carinate, the cells all equal, 1-ribbed; leaves from spathulate to oblong.—Hedge banks.

3. V. *Aurícula.* *A.* 7, 8. (—R.) 1. Fruit crowned with 1 erect membranous leaf, sub-globose, furrowed, fertile cell smallest; leaves from obovate to oblong.—Cultivated ground.

* Fruit having 2 compressed, prominent ribs in place of the barren cells,

4. V. *dentáta.* *A.* 6, 7. (—R.) 17. crowned with the small, oblique, unequally 4-toothed cal., glabrous; fl's in spreading corymbs.—Corn-fields and banks.

β. *mixta.* cal. 3-toothed; fruit villous.

5. V. *eriocárpa.* *A.* 6, 7. (—P.) E.-1. Fruit crowned with the large, oblique, unequally 5-7 toothed cal.; fl's. in condensed corymbs.—Ormeshead.

ORDER IV.—CAMPANULEÆ.

Herbs, rarely shrubs, having a milky juice which is sometimes acrid and emetic. Leaves alternate, ex-stipulate. Cal. 5-lobed, or entire. Cor. 5-lobed, often irregular, inserted with the stam. on the cal. *Anth. free or united. Ov. 2-5-celled;* style simple, hairy. *Fruit* dry, capsular, *many-seeded,* opening by lateral fissures or valves at the apex. *Embr.* straight, *erect, in axis of fleshy alb.*

* Cor. irregular. . . . . 1. LOBELIA.
* Cor. regular,
† rotate, in 5 deep segments. Fl's. in heads.
Anth. cohering by their bases. . . . . 2. JASIONE.
Anth. wholly free. . . . . 3. PHYTEUMA.
† Cor. campanulate, segments shallow. Fl's. not in heads . 4. CAMPANULA.

Tr. I. *LOBELIDÆ. Fl's. irregular. Anth. cohering.*

1. LOBE'LIA. *L.*

Cor. 2-lipped, cleft to the base on the upper side. Stigma surrounded by a fringe of hairs at base. Caps. 2-3-celled, the upper free part 2-3 valved.

1. L. *úrens.* *P.* 8, 9. (—B.) E.-1. Leaves nearly glabrous, toothed, lower obovate, stalked, upper lanceolate, sessile; stem leafy, branched; racemes terminal.—Heaths, Axminster.

2. L. *Dortmánna.* *P.* 7. (—B.) 2. Leaves sub-cylindrical, of 2 parallel tubes; stem leafless, simple; racemes terminal.—Mountain lakes.

Tr. II. *CAMPANULIDÆ. Cor. regular. Anth. mostly free. Style hairy.*

2. JASIO'NE. *L.* Sheep's-bit.

Cor. rotate, in 5 deep segments. Anth. united at base. Stigma clavate. Caps. 2-celled, opening at the top by a valvular pore.

1. J. *montána.* *P.* 7. (B.) 20. Leaves linear, bluntish, waved, hispid; ped. solitary, bearing a dense head of fl's.—Heathy hills.

3. PHYTEU'MA. *L.* Rampion.

Cor. as last. Fil. dilated at base. Stigma 2-3-cleft. Caps. opening at sides.

1. P. *orbiculáre.* *P.* 8. (B.) E.-1. Stigmas 3; heads globose, oblong in fruit; leaves crenate, lower cordate-ovate, stalked, evanescent, upper linear-lanceolate, sessile.—Chalky soil.

2. P. *spicátum.* *P.* 8. (+W.) E.-1. Stigmas 3; heads oblong, cylindrical in fruit; leaves as last, the lowest doubly serrated.—Thickets.

4. CAMPA'NULA. *L.* Bell-flower.

Cor. campanulate or sub-rotate, with 5 broad, shallow segments. Fil. dilated at base. Stigma 2-5-fid. Caps. 2-5-celled, bursting laterally, rarely at top.

* Fl. sessile in dense solitary and terminal heads.

1. C. *glomeráta.* *P.* 7, 8. (B.) E. S.-13. Stem angular, simple; leaves rough, crenate, ovate-lanceolate, the lower stalked, upper clasping.—Dry pastures.

* Fl. stalked.

† Cal. hairy or scabrous,

2. C. *hýbrida.* *A.* 6-9. (—R.) E. S.-10. the limb longer than the nearly rotate cor.; caps. elongated, triangular; leaves smooth, crenate, wavy, lower spathulate, upper oblong, sessile.—Corn fields.

3. C. *Trachélium.* *P.* 7, 8. (B.) 14. Cal.-limb shorter than the campanulate cor.; caps. globose; leaves rough, doubly serrate, lower cordate, stalked, upper ovate, sessile.—Hedges and thickets.

† Cal. smooth.

‡ Stem procumbent, filiform, branching; fl. solitary.

4. C. *hederácea.* *P.* 7, 8. (B.) 5. Leaves stalked, roundish-cordate, angularly 5-toothed, glabrous or with a few scattered hairs.—Moist woods.

‡ Stem erect or ascending.

§ Leaves scabrous or hairy; fl. numerous, in erect racemes or panicles.

‖ Cor. pubescent or hairy.

5. C. *latifólia.* *P.* 7, 8. (B.) 14. Stem simple; leaves ovate-lanceolate, crenate-serrate, lower stalked, upper nearly sessile.—Shady woods.

6. C. *rapunculóides.* *P.* 7, 8. (—B.) E. S.-3. Stem slightly branched; leaves crenate-serrate, lower cordate, stalked, upper lanceolate, sessile.—Woods.

‖ Cor. glabrous; leaves crenate.

7. C. *Rapúnculus.** *P.* 7, 8. (—B.) E.-5. Segments of cal. entire, subulate; leaves wavy; lower obovate-oblong, stalked, upper lanceolate, sessile.—Gravelly soil.

8. C. *pátula.* *B.* 7, 8.) (B.) E.-3. Segments of cal. toothed at base; leaves even, lower obovate-lanceolate, sub-petiolate, upper linear-lanceolate.—Thickets.

§ Leaves and stem smooth; fl. 1 or more, racemose.

9. C. *persicifólia.** *A.* 7. (B.) S.-1. Fl. erect; segments of cal. lanceolate; leaves slightly serrate, lower obovate, stalked, upper linear-lanceolate, sessile.—Woods.

10. C. *rotundifólia.* *P.* 7, 8. (B.) 20. Fl. drooping; segments of cal. linear-subulate; leaves slightly crenate, lower cordate or reniform, (soon withering,) gradually narrowing into linear ones upwards on the stem.—Dry places.

ORDER V.—LONICEREÆ.

Shrubs or herbs possessing cathartic, diaphoretic, or emetic properties. *Leaves* opposite, mostly *exstipulate*. *Cal.* with a superior 4-5-cleft limb, usually *with* 2 *or* 4 *bracts at base*. *Ov. with* 1-5 *cells*, 1 *being often* 1-*seeded*, the rest many-seeded. Style 1 or 0; stigmas 3-5. *Fruit not lobed*, indehiscent, 1 or more-celled, dry or succulent. Seeds either single and pendulous, or numerous and attached to axis. *Embr. small, straight, in fleshy alb.*; rad. superior.

* Style 0; stigmas 3.
  - Leaves pinnate. Cor. rotate. . . . . 1. SAMBUCUS.
  - Leaves simple. Cor. funnel-shaped. . . . . 2. VIBURNUM.
* Style filiform; stigma capitate.
  - Cor. mostly irregular. Stam. 5. . . . . 3. LONICERA.
  - Cor. regular. Stam. 4. . . . . 4. LINNÆA.

1. SAMBU'CUS. *L.* Elder.

Cal. 5-cleft. Cor. rotate, 5-lobed. Stam. 5. Stigmas 3, sessile. Berry 3 or 4-seeded.

1. S. *ébulus.* *P.* 7. (W.) 18. Stip. leafy; leafl. lanceolate; stem herbaceous, bearing cymes with 3 principal branches.—Hedges.

2. S. *nigra.* *T.* 6. (+W.) 19. Stip. 0; leafl. ovate; stem arboreous, bearing cymes with 5 principal branches.—Hedges.

β. *laciniáta*, leafl. laciniated.—Near Ayr.

2. VIBU'RNUM. *L.* Guelder-rose.

Cal. 5-cleft. Cor. campanulate, 5-lobed. Stam. 5. Stigmas 3, sessile. Berry 1-seeded.

1. V. *Lantána.* *T.* 5. (W.) E. S.-10. Leaves elliptic, cordate, serrated, downy beneath; young branches very downy.—Thickets.

2. V. *O'pulus.* *S.* 5. (W.) 19. Leaves 3-5-lobed acuminate, serrated, glabrous; branches all glabrous.—Thickets.

3. LONI'CERA. *L.* Honey-suckle.

Cal.-limb small, 5-toothed. Cor. tubular, or funnel-shaped, the limb irregular, 5-cleft. Stam. 5. Style filiform. Berry 1-3-celled, 1 or more-seeded.

1. L. *Caprifólium.** *S.* 5, 6. (—Y.) E. S.-4. Fl's. in terminal, sessile whorls; leaves smooth, the upper connate perfoliate; stem twining.—Thickets.

2. L. *Periclýmenum.* *S.* 6. (r.—Y.) 20. Fl's. in terminal, stalked heads; leaves all distinct, smooth, rarely downy beneath; stem twining.—Hedges.

3. L. *Xylósteum.** *S.* 7. (Y.) E. S.-3. Ped. 2-fl'd., woolly; leaves oval, downy, distinct; stem erect, not twining.—Thickets.

4. LINNÆ'A. *Gronov.*

Cal.-limb 5-cleft. Cor. campanulate, 5-cleft, regular. Stam. didynamous. Style filiform. Fruit a dry 1-seeded, 3-celled berry; 2 of the cells barren.

1. L. *boreáli.* Stem creeping; ped. erect, with 2 drooping fl's.; cor. cam-
P. 5, 6. (—R.) E. S.-3. panulate.—In fir woods.

ORDER VI.—GALIEÆ OR STELLATÆ.

Herbs, with whorled leaves, and angular stems, without any important qualities. Limb of cal. 4 or 5-lobed, or obsolete. Cor. regular 3, 4 or 5-cleft. *Stam.* 4 or 5, *epipetalous.* Ov. 2-celled. Styles 2. *Fruit a didymous, indehiscent pericarp.* Seeds 2; *embr. in axis of horny alb.*; rad. inferior.

Cor. mostly 5-cleft. Stam. 5. Cal. limb 0.	1. RUBIA.
Cor. 3 or 4-cleft. Stam. 4.	
Cal.-limb 0. Cor. rotate 4-cleft.	2. GALIUM.
Cal.-limb 0. Cor. funnel-shaped 3 or 4-cleft. . . .	3. ASPERULA.
Cal.-teeth 4, 2 of the teeth bifid.	4. SHERARDIA.

1. RU'BIA. *L.* Madder.

Cor. rotate or campanulate, 3-5-cleft. Stam. 4 or 5. Fruit a 2-lobed berry; cal.-teeth 0.

1. R. *peregrína.* Leaves 4-6 in a whorl, lanceolate, shining, margin and
P. 6-8. (Y.) E. I.-4. keel rough with reflexed bristles.—Gravelly places.

2. GA'LIUM. *L.* Bed-straw.

Cor. rotate, 4-cleft. Stam. 4. Fruit dry, not crowned by teeth of cal.

* Leaves, especially the upper, 4, rarely 5 in a whorl, not bristle pointed.
† Leaves and stem hairy, (not bristly.) Fruit smooth.

1. G. *cruciátum.* Leaves ovate, 4 in a whorl; ped. axillary corymbose, with
P. 5, 6. (Y.) 18. 2 bracts, terminal fl's. fertile.—Hedges.

† Leaves not hairy, smooth or bristly. Ped. patent in fruit.

2 G. *palústre.* Fruit smooth; panicle diffuse; leaves oblong-lanceolate,
P. 7, 8. (W.) 19. obtuse, their margins and the lax spreading stems smooth.—Wet places.

β. *Witheríngii.* leaves 5 in a whorl; margins and stem rough with deflexed bristles.—Dry places.

3. G. *boreále.* Fruit rough with hooked bristles; corymb. compact;
P. 7, 8. (W.) 7. leaves lanceolate, 3-ribbed, smooth, mucronate; stem erect.—Moist rocks.

* Leaves more than 5 in a whorl.
† Stem smooth or hairy, not bristly.
‡ Margins of leaves rough with bristles pointing forwards.
§ Edges of leaves revolute.

4. G. *vérum.* Leaves linear, channelled above, downy beneath; panicles
P. 7, 8. (Y.) 20. densely flowered.—Dry places.

§ Edges of leaves not revolute.

5. G. *eréctum.* Leaves lanceolate, 8 in a whorl, mucronate, with 2 rows of
P. 8. (W.) 7. marginal bristles, sometimes downy beneath, mid-rib slender; panicles of many ascending branches; pet. acuminate.—Pastures, hedges.

β. *cinereum.* leaves linear, 6-8 in a whorl.

6. G. *saxátile.* *P.* 7, 8. (W.) 20. Leaves obovate, about 6 in a whorl, pointed, with a few ascending, marginal prickles; stem much branched, corymbose; pet. acute, not mucronate.—Rocky heaths.

7. G. *Mollúgo.* *P.* 7, 8. (W.) 15. Leaves obovate-oblong, cuspidate, 8 in a whorl, and as well as stem glabrous; panicles lax, spreading; pet. mucronate, thick-tipped.—Hedges.

β. *scábum.* leaves 6-whorled, and with the stem hairy.

γ. *insúbricum.* leaves 6-whorled, obovate, abruptly cuspidate; panicles terminating in 3-chotomous umbels.

δ. *aristátum.* leaves 6-whorled, petioled, lanceolate, mucronate; fruit separating into 2 reniform carpels.

‡ Margins of leaves smooth or hairy.

8. G. *pusíllum.* *P.* 7, 8. (W.) 3. Leaves 8 in a whorl, linear-lanceolate, somewhat hairy, hair pointed; panicle terminal, forked; fruit smooth.—Limestone-hills.

† Stem rough at the angles with recurved bristles.

‡ Margins of leaves rough with bristles pointing forwards.

9. G. *A'nglicum.* *A.* 6, 7. (W.) E.-4. Panicles dichotomous, axillary, branches bifid; fruit granulated, the stalks divaricating; upper leaves 6 in a whorl, linear-lanceolate.—Dry places.

10. G. *saccharátum.* *P.* 6-8. (Y.) E. S.-1. Ped. 3-fl'd axillary; fruit a double globe, warted, drooping; leaves all 6-whorled, linear-lanceolate.—Cornfields.

‡ Marginal bristles of leaves recurved near the apex.

§ Leaves mucronate, 6-8 in a whorl, lanceolate.

11. G. *uliginósum.* *P.* 6-8. (W.) 17. Fruit smooth; fl's. in small 3-chotomous panicles; stem weak, rough with reflexed bristles.—Wet places.

12. G. *Aparíne.* *A.* 5-8. (W.) 20. Fruit covered with hooked bristles; fl's. 2-3, axillary; stem very long and weak, very rough with reflexed bristles.—Hedges.

§ Leaves not mucronate.

13. G. *tricórne.* *A.* 6-9. (W.) E.-6. Fruit large, double, granulated, drooping; ped. axillary, 3-fl'd.; stem procumbent.—Chalky fields.

14. G. *spúrium.* *A.* 6, 7. (W.) S. ? Fruit small, 2-lobed, smooth, divaricating; ped. axillary, more than 3-fl'd.; stem straggling, cymose.—Forfarshire.

β. *Vaillantii.* fruit small, hispid.

3. ASPE'RULA. *L.* Woodruff.

Cor. funnel-shaped. Stam. 4. Fruit dry, not crowned by teeth of cal.

1. A. *Cynánchica.* *P.* 6, 7. (—P.) E. T.-8. Leaves 4 in a whorl, linear, mucronate, the upper very unequal; fl's. in corymbs; cor. 4-cleft, scabrous.—Dry banks.

2. A. *odoráta.* *P.* 5, 6. (W.) 20. Leaves 6-8 in a whorl, lanceolate, with a hooked point, all equal; fl's. panicled, cor. often 3-cleft, smooth.—Woods.

4. SHERA'RDIA. *L.* Field-madder.

Cor. funnel-shaped. Stam. 3 or 4. Fruit dry, crowned by cal.-teeth; 2 of the teeth bifid.

S. *arvénsis.* *A.* 5-7. (B.) 20. Fl's. in a small, sessile, terminal ambel; leaves 6 in a whorl., obovate-lanceolate, acute.—Gravelly soils.

DIVISION II.—APOPETALOUS PERIGYNOUS EXOGENS.

PERIGYNOUS EXOGENS, with the corolla consisting of distinct petals, or altogether absent.

ORDER VII.—GROSSULARIEÆ.

Shrubs, often spiny, with alternate, lobed, exstipulate leaves, and innocuous properties. Fl's. rarely diœcious. Cal. with a 4 or 5-cleft limb. Pet. 5, small. Stam. 5, epigynous. *Ov.* 1-celled, *with* 2 opposite *parietal placentæ;* style cleft. Fruit a berry, crowned with the remains of the fl., 1-celled. *Seeds numerous, suspended in the pulp by long funiculi;* testa gelatinous externally, firmly adherent to the *large horny alb.; embr. minute*, straight; rad. next hilum.

1. RIBES. *L.*

* Stems spinous; fl's. 1-3, axillary, (Gooseberry.)

1. R. *Grossulária.* Leaves rounded, lobed; ped. hairy, 1, 2, or rarely 3-fl'd.,
S. 4, 5. (+W.) 13. with 2 minute bracts; fruit generally hairy; branches spreading.—Thickets.
β. *reclinátum.* branches arched, recurved.

* Stems not spinous; fl's. numerous, in racemes, (Currant.)

† Bracts longer than the often diœcious fl's., lanceolate.

2. R. *alpínum.* Racemes upright in fl. and fruit; cal. glabrous, the limb
S. 4, 5. (—Y.) E. S.-5. nearly flat; leaves 3-lobed, serrate.—Woods.

† Bracts shorter than the pedicels of the perfect fl's.

3. R. *nigrum.* Cal. pubescent, the limb campanulate; bracts subulate;
S. 5. (—G.) 9. racemes lax, downy, pendulous.—Damp woods.
4. *R. rúbrum.* Cal. glabrous, the limb nearly flat; bracts ovate; racemes
S. 5, 6. (—G.) 6. mostly glabrous, pendulous.—Mountain woods.
β. *petræ'um.* racemes slightly downy, erect in fl., pendulous in fruit.
γ. *spicátum.* racemes erect in fl. and fruit.

ORDER VIII.—ANGELICEÆ OR UMBELLIFERÆ.

Herbs, generally with fistular, furrowed stems; often highly poisonous, except the fruit, which is rarely so. Leaves mostly divided, and sheathing at base. *Fl's. arranged in umbels*, simple or compound; sometimes in compact heads. Cal. with the limb 5-toothed, or obsolete. Pet. 5, usually with an inflexed or incurved point. Ov. 2-celled. *Styles* 2. *Fruit generally crowned by the indurated base of the styles* (stylopodium); consisting of 2 carpels, separable from a common axis to which they adhere by their face (commisure); each carpel has 5 primary more or less distinct, and sometimes 4 intermediate, secondary ridges; and in the substance of the ripe pericarp of many species, may be observed dark linear receptacles of oil (vittæ). *Seeds solitary*, pendulous, rarely loose in the pericarp; *embr. minute at base of a large alb.*

* Leaves simple, never pinnate. Umbels simple, or hardly perfect.
† Fruit smooth, laterally compressed. Cal.-teeth 0.
Fruit longer than broad. Carpels nearly terete. . . 33. BUPLEURUM.
Fruit broader than long. Carpels flat. . . . 12. HYDROCOTYLE.

† Fruit rough; roundish transversely.
Leaves spinous. Fruit with hooked prickles. . . 14. ERYNGIUM.
Leaves not spinous. Fruit scaly or bristly. . . 15. SANICULA.
Leaves not spinous. Ridges of fruit toothed. . . 13. ASTRANTIA.
* Leaves compound. Umbels mostly compound and perfect.
† [1] Fruit beaked.
Beak more than twice the length of fruit. . . . 1. SCANDIX.
Beak shorter than fruit. . . . . 2. ANTHRISCUS.
† [2] Fruit linear, but not beaked.
Fruit (nearly an inch long), with a double pericarp. . 3. MYRRHIS.
Fruit (much shorter), with a single pericarp. . . 4. CHÆROPHYLLUM.
† [3] Fruit neither beaked nor linear,
‡ prickly,
§ and laterally compressed.
Prickles of fruit straight. . . . . 9. TORILIS.
Prickles of fruit hooked. . . . . 10. CAUCALIS.
§ Fruit rather dorsally compressed. . . . . 16. DAUCUS.
‡ Fruit smooth, or rarely hairy.
§ Leaves and invol. spiny. . . . . 5. ECHINOPHORA.
§ Neither leaves nor invol. spiny.
‖ [1] Fruit much and dorsally compressed,
¶ with a single wing at each side;
** Wings with a thick, knotty border. . . 17. TORDYLIUM.
** Wings flat and even,
‡‡ and the 2 lateral ridges near the edge of each. 18. PASTINACA.
‡‡ Ridges 0 on the wings.
Vittæ on the upper half of the fruit only. 19. HERACLEUM.
Vittæ as long as fruit. . . . 20. PEUCEDANUM.
¶ Fruit with a double wing on each side. . . 21. ANGELICA
‖ [2] Fruit perfectly circular in a transverse section.
¶ Partial invol. of 3 bracts; general 0. . . 25. ÆTHUSA.
¶ Partial invol. of more than 3 bracts.
** Styles long, erect. . . . . 22. ŒNANTHE.
** Styles short, reflexed, or diverging.
†† Carpels with the 5 primary ridges more prominent.
‡‡ General invol. of 1-3 bracts rarely 0.
Pet. elliptical, the point incurved. . 27. MEUM.
Pet. obovate, with an inflexed lobe. . 28. SILAUS.
‡‡ General invol. of more than 3 bracts.
Leaves not fleshy. Fruit hairy. . 23. SESELI.
Leaves fleshy. Fruit smooth. . 24. LIGUSTICUM.
Leaves not fleshy. Fruit smooth. . 26. CRITHMUM.
†† Carpels with the 4 secondary ridges more prominent. . . . . 11. CORIANDRUM.
‖ [3] Fruit laterally compressed.
¶ Leafl. of all the leaves linear, or in filiform segments.
** Cal. of 5 leafy teeth. . . . . 30. CICUTA.
** Cal.-teeth obsolete.
†† Stylopodium conical. . . . 39. BUNIUM.
†† Stylopodium depressed, or 0.
‡‡ Fl's. perfect. Fruit oblong.
Pet. obcordate, with an inflexed point. 40. CARUM.
Pet. roundish, with an obtuse, involute segment. . . . 29. FŒNICULUM.
‡‡ Fl's. diclinous. Fruit ovate. . 34. TRINIA.
¶ Leaves mostly with broad, oblong, or roundish leafl.
** With both general and partial invol.'s.
†† Pet. with a straight or incurved apiculus. 31. HELOSCIADIUM.
†† Pet. with an inflexed point.
‡‡ Carpels with wavy or crenate ridges. . 7. CONIUM.
‡‡ Carpels with straight and even ridges.
§§ Cal. with 5 small teeth.
Ridges on fruit indistinct. . 6. PHYSOSPERMUM.
Ridges on fruit prominent. . 32. SIUM.
§§ Cal.-teeth obsolete.
Partial invol. of 5 bracts. . 37. PETROSELINUM.
Partial invol. of 1-3 bracts. . 38. SISON.

** Invol'a. 0.
†† Pet. obcordate, with an inflexed point.
Stylopodium conical. . . . 35. ÆGOPODIUM.
Stylopodium depressed. . . . 41. PIMPINELLA.
†† Pet. roundish or elliptical, entire.
Fruit with the opposite pairs of lateral ridges obsolete, approximate. . . . } 8. SMYRNIUM.
Fruit with the opposite pairs of lateral ridges prominent, and separated by a fissure . } 36. APIUM.

N. B.—The following is the arrangement of this order in De Candolle's Prodromus.

SUB-ORDER I.—CAMPYLOSPERMINÆ.. Alb. or seed deeply channelled or involute next the commissure.

Tr. I. *SCANDICIDÆ. Fruit beaked or oblong, laterally compressed. Carpels with 5 primary ridges, which are sometimes indistinct, but well marked on the beak. Secondary ridges* 0. *Cal.-teeth mostly obsolete.*

1. SCA'NDIX. *L.* Shepherd's-needle.

Fruit with a very long beak. Carpels with 5 obtuse ridges. Pet. obovate, with an inflexed point. Partial invol. of 5-7 bracts.

1. S. *Pecten-Véneris.* *A.* 6-9. (W.) 20. Fruit nearly smooth, beak bristly-edged; leafl. cut into linear segments.—Corn-fields.

2. ANTHRI'SCUS. *Spreng.* Beaked-parsley.

Fruit constricted at suture, the beak ribbed, shorter than the ribless carpels. Cal.-teeth obsolete. Pet. obovate. Partial invol. of many bracts.

1. A. *sylvéstris.* *P.* 4-6. (W.) 20. Umbels stalked, terminal; fruit linear, glabrous; leaves bipinnate.—Banks.
2. A. *vulgáris.* *A.* 5, 6. (W.) 19. Umbels shortly stalked, lateral; fruit ovate, hispid; leaves tripinnate.—Waste places.
2. A. *cerefólium.** *A.* 6, 7. (W.) 4. Umbels sessile, lateral; fruit linear, smooth; leaves tripinnate.—Waste ground.

3. MY'RRHIS. *Tourn.*. Cicely.

Pet. obcordate, with an inflexed point. Fruit not beaked. Pericarp double, the outer portion with 5 sharp ridges, hollow within; the inner closely adnate to seed. Vittæ 0.

1. M. *odoráta.* *P.* 5, 6. (W.) 8. Leaves downy beneath, tripinnate; bracts of partial invol. lanceolate-acuminate.—Hilly pastures.

4. CHÆROPHY'LLUM. *L.* Chervil.

Pet. obcordate, with a short, inflexed point. Fruit not beaked. Carp. with 5 equal, obtuse ridges. Vittæ single in the interstices.

1. C. *témulentum.* *P.* 6, 7. (W.) 20. Leaves bipinnate; leafl. ovate-oblong, with obtuse mucronate segments.—Hedge-banks.
2. C. *aromáticum.** *P.* 6. (W.) S. ? Leaves bipinnate; leafl. ovate, sub-acute, sharply serrated.—Roadside.
3. C. *aúreum.** *P.* 6. (Y.) S. ? Leaves tripinnate; leafl. of the upper leaves attenuated, sharply pinnatifid.—Fields.

Tr. II.—*SMYRNIDÆ. Fruit never beaked, rather laterally compressed. Carpels with primary ridges only, which are sometimes indistinct.*

5. ECHINO'PHORA. *L.* Prickly-samphire.

Cal. 5-toothed. Pet. obcordate, with an inflexed point. Fruit ovate, lodged in a prickly receptacle, with a prickly invol. Channels with single vittæ, covered by a web.

1. E. *spinósa.** *P.* 7. (W.) E. ? — Leaves bipinnatifid, the segments trifid, subulate, spinous; invol. entire.—Sea-shores. Kent. Lancashire.

6. PHYSOSPE'RMUM. *Cass.* Bladder-seed.

Cal. 5-toothed. Pet. ob-cordate; the point inflexed. Fruit of 2 ovate-globose carpels, each with 5 filiform ridges, and single vittæ between.

1. P. *cornubiénse.* *P.* 7. (W.) E.-1. — Lower leaves triternate, or deeple 3-lobed; leafl. wedge-shaped, cut, upper ternate, lanceolate, entire; seed loose.—Bushy fields.

7. CO'NIUM. *L.* Hemlock.

Cal.-teeth obsolete. Pet. obcordate. Fruit broadly ovate. Carpels with 5 prominent, waved, or crenate ridges. Vittæ 0.

1. C. *maculátum.* *B.* 6, 7. (W.) 19. — Stem glabrous, spotted; leaves tripinnate; leafl. lanceolate, pinnatifid, with cut segments; partial invol. 3-leaved, spreading, unilateral.—Hedge-banks.

8. SMY'RNIUM. *L.* Alexanders.

Cal.-teeth 0. Pet. lanceolate or elliptical, with an inflexed point. Fruit of 2 turgid carpels, each with 3 dorsal, prominent ridges; the 2 lateral ones obsolete, and combined with those of the opposite carpel.

1. S. *olusátrum.* *B.* 5, 6. (g Y.) 20. — Stem-leaves ternate, stalked; root-leaves with sheathing petioles; leafl. ovate, shining, cut and serrated.—Waste grounds. Sea cliffs.

Tr. III.—*CAUCALIDÆ. Fruit not beaked, slightly laterally compressed. Carpels with the secondary ridges prominent, and often prickly.*

9. TORI'LIS. *Adans.* Hedge-parsley.

Cal. 5-toothed. Pet. obcordate, outer ones radiant and bifid. Carpels with the primary ridges bristly; prickles of the interstices numerous, straight.

1. T. *Anthríscus.* *A.* 7, 8. (W. *v.*—R.) 20. — Stem erect; umbels compound, terminal; general invol. of many subulate bracts; leafl. lanceolate, cut and serrate.—Hedge-banks.

2. T. *infésta.* *A.* 7, 8. (—R.) 12. — Stem erect; umbels compound, terminal; general invol. 0, or of 1 bract; leafl. ovate, pinnatifid, cut.—Waste places.

3. T. *nodósa.* *A.* 5-7. (—R.) 16. — Stem prostrate; umbels simple, lateral, nearly sessile; outer fruits most prickly; leafl. ovate, with linear, acute segments.—Dry places.

10. CAU'CALIS.

Cal. 5-toothed. Pet. obcordate, with an inflexed point; outer radiant, and deeply bifid. Carpels with the primary ridges bristly, the secondary with hooked prickles.

1. C. *daucoides.* *A.* 6. (—W.) E.-2. Umbels all 3-cleft; general invol. 0, partial of 3-5 bracts; leaves 2-3-pinnate, leafl. with short, linear segments.—Chalky fields.

2. C. *latifólia.** *A.* 6. (—R.) E.-1. General umbels 3-cleft, partial 5-fl'd.; invols. membranous; leaves pinnate, leafl. lanceolate, decurrent, coarsely serrated.—Chalky fields, Cambridgeshire.

SUB-ORDER II.—CÆLOSPERMINÆ. Seed not channelled next the commissure; but the base and apex curving inwards.

Tr. IV.—*CORIANDRIDÆ. Fruit globose or didymous, smooth; carpels with the secondary ridges the more prominent.*

11. CORIA'NDRUM. *L.* Coriander.

Cal. 5-toothed. Pet. obcordate, the point inflexed. Fruit globose; carpels hemispherical, with 4 secondary ridges. Commissure with 2 vittæ.

C. *sativum.** *A.* 6. (W.) E. S.-1. General invol. 0, partial on one side; leaves bipinnate, the upper with linear segments.—Fields.

SUB-ORDER III.—ORTHOSPERMINÆ. Seed or albumen solid, not channelled next the commissure, nor curved.

Tr. V.—*HYDROCOTYLIDÆ. Fl's. in simple or imperfect umbels; sometimes capitate or whorled. Fruit much compressed laterally.*

12. HYDROCO'TYLE. *L.* White-rot. Marsh-pennywort.

Cal.-teeth 0. Pet. ovate acute. Fruit of 2 flat, nearly orbicular carpels, each with 5 filiform ribs, of which the middle dorsal and 2 lateral are often indistinct. Vittæ 0.

1. H. *vulgáris.* *P.* 5-7. (W. *v.*—R.) 20. Leaves peltate, orbicular, somewhat lobed and crenate; umbels capitate, 5-fl'd.—Marshy places.

13. ASTRA'NTIA. *L.*

Cal. of 5 leafy teeth. Pet. erect, connivent; point long, inflexed; carpels with 5 plaited and toothed ridges.

1. A. *májor.** *P.* 6-8. (W.) E.-1. Lower leaves palmate, 5-7-fid, lobes cut and serrate; bracts entire; cal.-teeth ovate-lanceolate.—Malvern. Ludlow.

14. ERY'NGIUM. *L.* Eryngo. Sea-holly.

Cal. of 5 leafy teeth. Pet. erect, oblong; point long, inflexed. Fruit ovate, covered with chaffy scales or bristles. Ridges 0. Vittæ 0.

1. E. *maritimum.* *P.* 7, 8. (—B.) 10. Root-leaves roundish, plaited, spinous, stalked; upper lobed, rigid, clasping; bracts 3-lobed, spinous; scales of receptacle 3-cleft.—Sea-shore.

2. E. *campéstre.** *P.* 7, 8. (—P.) E. I.-1. Root-leaves sub-ternate, lobes pinnatifid, upper leaves bi-pinnatifid, clasping, all spinous; bracts lanceolate, spinous; scales of receptacle entire.—Stonehouse, Plymouth. Lismore.

15. SANI'CULA. *L.* Sanicle.

Cal.-teeth leafy. Pet. erect, obovate, with long, inflexed, connivent points. Fruit ovate, covered with hooked prickles; ridges 0; vittæ many.

1. S. *Europæ'a.* *P.* 5, 6. (W.) 20. Lower leaves palmate, 3-5-lobed, the lobes 3-fid., cut and serrate; fl's. nearly all sessile.—Woods.

Tr. VII.—*DAUCIDÆ. Umbels perfect. Fruit not beaked, dorsally compressed. Carpels with the 5 primary ridges, filiform and bristly; the 4 secondary, prickly, and often the more prominent.*

16. DAU'CUS. *L.* Carrot.

Cal. 5-toothed. Pet. obcordate, the outer ones radiant and deeply bifid; carpels with bristly, primary ridges; the secondary ones with a single row of long prickles.

1. D. *Caróta.* *B.* 7, 8. (W.) 20. Umbels, when in fruit, concave; fruit rough, with subulate bristles; general invol. with pinnatifid bracts; leaves tripinnate; leafl. pinnatifid, not fleshy, with acute segments.—Banks.

2. D. *marítimus.* *B.* 7, 8. (W.) 2. Umbels, when in fruit, convex; fruit rough, with dilated, flattened bristles; general invol. and leaves as last, but with fleshy leafl., and rounded segments.—Sea-coast.

Tr. VIII.—*PEUCEDANIDÆ. Umbels perfect. Fruit not beaked, much and dorsally compressed, with a single wing at each side. Secondary ridges* 0.

17. TORDY'LIUM. *L.* Hart-wort.

Cal.-teeth subulate. Outer pet. radiant. Fruit with a broad, thick, crenate or waved margin; carpels with 3 dorsal, and 2 distant, marginal, indistinct ridges. Channels with 1-3 vittæ.

1. T. *officinále.** *A.* 6, 7. (W.) E. ? Invol. as long as umbels; 2 outer pet. radiant, each with 2 very unequal lobes; margin of fruit glabrous.—Near London.

2. T. *máximum.** *A.* 7. (—R.) E.-1. Invol. shorter than umbels; 2 outer pet. radiant, with 2 equal lobes; margin of fruit with adpressed bristles.—Waste ground.

18. PASTINA'CA. *L.* Parsnep.

Cal.-teeth minute. Pet. entire, involute, with a sharp point. Fruit with a broad margin; carpels with 3 dorsal, and 2 distant, marginal ridges, with single filiform vittæ between.

1. P. *sativa.* *B.* 7. (Y.) 11. Leaves pinnate, downy beneath; leafl. ovate, cut and serrated; terminal one 3-lobed; invol. 0.—Chalky soil.

19. HERA'CLEUM. *L.* Cow-parsnep. Hog-weed.

Cal.-teeth minute. Pet. obcordate, with an inflexed point, the outer radiant; carpels with 3 dorsal, and 2 distant, marginal ridges, and single clavate, abbreviated vittæ between.

1. P. *sphondýlium.* *B.* 7. (W.) 20. — Leaves pinnate, hairy; leafl. pinnatifid, cut, sinuated; pet. unequal; fruit, at length, glabrous.—Hedge-banks.
β. *angustifólium.* — leaves deeply pinnatifid, lobes lanceolate.

20. PEUCE'DANUM. *L.* Hog's-fennel.

Pet. ovate, or obcordate, with an inflexed point; carpels with 3 dorsal, filiform ridges, the 2 lateral obsolete, and single filiform vittæ between.

1. P. *officinále.* *P.* 7-9. (Y.) E.-1. — Leaves 5 times 3-parted; leafl. linear-filiform, acute, flaccid; general invol. of 3 bracts.—Salt marshes.
2. P. *palústre.* *P.* 7, 8. (W.) E.-6. — Leaves tripinnate; leafl. pinnatifid, with linear-lanceolate, acute segments; general invol. of many deflexed bracts.—Marshes.
3. P. *Ostrúthium.** *P.* 6. (W.) S.-5. — Leaves bipinnate; leafl. broadly ovate, lobed, cut, serrated, sheaths large; general invol. 0.—Moist pastures.

Tr. IX.—*ANGELICIDÆ. Umbels perfect. Fruit not beaked, much and dorsally compressed, with a double wing at each side.*

21. ANGE'LICA. *L.*

Pet. entire, with an inflexed point; carpels with 3 elevated, dorsal ridges, the 2 lateral ones dilated into a wing at each side.

* Cal.-teeth obsolete; channels with single vittæ, seed with none.

1. A. *sylvéstris.* *P.* 7, 8. (W.) 14. — Leafl. all equal, ovate, not decurrent, serrated at base, lateral ones rather unequal at base.—Wet-places.

* Cal.-teeth 5; vittæ none on the fruit, numerous on seed.

2. A. *Archangélica.** *P.* 7-9. (—G.) E. S. ? — Leafl. ovate, the terminal one trifid, all sessile, decurrent.—Watery places.

Tr. X.—*SESELIDÆ. Umbels compound. Fruit not beaked, round, or roundish in a transverse section, not much compressed either way.*

22. ŒNA'NTHE. *L.* Water-dropwort.

Cal.-teeth lanceolate. Pet. obcordate, with an inflexed point. Fruit ovate-cylindrical, crowned with the long, erect styles; carpels more or less corky, with 5 blunt, convex ridges, and single vittæ between.

* General invol. 0, or of not more than 4 bracts.

† Stem leaves simply pinnate, leafl. linear.

1. Œ. *fistulósa.* *P.* 7-9. (W.) E. I.-17. — Petioles very long, hollow; root-leaves with 3-fid leaflets; root with creeping scions; fruit . . . ?—By ditches.
2. Œ. *Smithii.* *P.* 6. (W.) E.-7. — Petioles shorter than leaves; leafl. all simply pinnate; root with a cluster of shortish, thick clavate, or oblong, fusiform, sessile tubercles; fruit sub-cylindrical, scarcely so broad as cal., callous at base.—Marshes.

† Leaves all 3-pinnate, leafl. ovate, pinnatifid, cut.

3. Œ. *Phellándrium.* Umbels opposite the leaves; rhizome jointed, with whorls
P. 7-9. (W.) 13. of fibres at joints; fruit ovate-oblong.—In ditches.
β. *fluviátilis.* submersed leaves multifid.—Swift streams.

* General invol. of more than 4 bracts.

4. Œ. *Lachenálii.* Leafl. of lower leaves linear-obovate, or cuneate, trifid, ob-
P. 6-9. (W.) 10? tuse, with a short and straight mucro; fruit oblong, turbinate, broader than cal., tapering below, not callous at base; root bearing elongate, slender, clavate, fusiform, or sub-cylindrical, sessile tubercles.

5. Œ. *pimpinelloides.* Leaves pinnate, leafl. and segments very acute, with a
P. 7-9. (W.) ? curved mucro, those of the lower leaves shorter and broader; fruit cylindrical, as broad as cal., callous at base; tubercles of the root roundish-oval on long, slender stalks.

6. Œ. *crocáta.* Lower leaves 2-3-pinnate, those of stem pinnatifid; leafl.
P. 7. (W.) 15. oblong-wedge-shaped, variously cut; fruit cylindrical, oblong; root with large, fusiform tubercles.—Wet places.

23. SE'SELI. *L.* Meadow-saxifrage.

Cal.-teeth acute. Pet. obcordate, with an inflexed lobe. Fruit ovate, crowned with the reflexed styles; carpels with 5 thick, blunt ridges, and single vittæ between.

1. S. *Libanótis.* Fruit hairy; leaves bi-pinnate; leafl. cut, the segments
P. 7, 8. (W.) E.-1. lanceolate, very acute; general invol. of many bracts.—Chalky fields.

24. LIGU'STICUM. *L.* Lovage.

Cal.-teeth small or 0. Pet. obcordate, with an inflexed lobe, and short claw. Fruit elliptical; carpels with 5 sharp, somewhat winged ridges. Vittæ many.

1. L. *Scóticum.* Leaves twice ternate, leafl. sub-rhomboid, dentate-serrate,
P. 7. (—G.) E. S.-5. not glossy; invol. of 5-7 bracts.—Rocky coasts.

25. ÆTHU'SA. *L.* Fool's-parsley.

Cal.-teeth obsolete. Pet. obcordate, point acute, inflexed. Fruit globose-ovate, crowned with the reflexed styles; carpels with 5 keeled ridges, and single vittæ between.

1. Æ. *Cynápium.* Leaves uniform, leafl. wedge-shaped, decurrent, segments
A. 7, 8. (W.) 20. lanceolate.—Fields and gardens.

26. CRI'THMUM. *L.* Samphire.

Cal-teeth obsolete. Pet. elliptical, entire, involute. Fruit oval; carpels spongy, with 5 elevated, sharp ridges, and with the free seed marked with many vittæ.

C. *marítimum.* Leaves fleshy, 2-3-pinnate, leafl. lanceolate; invol. with
P. 8. (—G.) 3. ovate bracts.—Sea-cliffs.

27. ME'UM. *Tourn.* Spignel. Meu. Bald-money.

Cal.-teeth 0. Pet. entire, elliptical, the point incurved. Fruit oval; carpels with 5 prominent, keeled, equal ridges, and many vittæ between.

1. M. *athamánticum.* Leaves bi-pinnate, leafl. multipartite, segments bristle-
P. 6, 7. (—Y.) E. S.-6. shaped, acute.—Dry hilly pastures.

28. SILAU'S. *Besser.* Pepper-saxifrage.

Cal.-teeth 0. Pet. nearly entire, with an inflexed lobe, sessile, truncate, and appendaged at base. Fruit oval; carpels with 5 sharp, somewhat winged ridges, and many vittæ between.

1. S. *praténsis.* General invol. of 1 or 2 bracts; leaves tripinnate, leafl.
P. 6-9. (—Y.) 13. linear-lanceolate, opposite.—Moist pastures.

29. FŒNI'CULUM. *Hoffm.* Fennel.

Cal.-teeth 0. Pet. roundish, with an obtuse, involute lobe. Fruit oblong; carpels with 5 prominent, obtuse, keeled ridges, and single vittæ between.

1. F. *vulgáre.* Involucres 0; stem terate below, solid; leaves bi-ternate,
P. 7, 8. (Y.) E. I.-11. leafl. filiform, with subulate segments.—Sea-cliffs.

Tr. XI.—*AMMINIDÆ. Umbels compound, rarely imperfect. Fruit laterally compressed, or didymous. Carpels with 5 equal, filiform ridges.*

30. CICU'TA. *L.* Water-hemlock. Cowbane.

Cal.-teeth leafy. Pet. obcordate. Fruit of 2 nearly globose carpels, with 5 broad, flattened ridges, the 2 lateral connate, and single vittæ between.

1. C. *virósa.* Leaves tripartite; leafl. linear-lanceolate, acute, serrate,
P. 7, 8. (W.) 11. decurrent.—Watery places.

31. HELOSCIA'DIUM. *Koch.* Marsh-wort.

Cal.-teeth often 0. Pet. ovate, obtuse, with an apiculus. Fruit ovate or oblong; carpels with 5 slender, prominent ridges, and single vittæ between.

1. H. *nodiflórum.* Stem procumbent; leafl. ovate, or ovate-lanceolate, ob-
P. 7, 8. (W.) 16. tusely serrated; umbels sessile, or nearly so.—Ditch-banks.
β. répens. stem creeping; leafl. acutely inciso-serrate; umbels shorter than peduncles.
2. H. *inundátum.* Stem creeping; leafl. of the lower leaves capillary of the
P. 6, 7. (W.) 18. upper cuneate, trifid; umbels 2-rayed.—Submersed.

32. SI'UM. *L.* Water-parsnep.

Cal.-teeth small. Pet. obcordate, with an inflexed point. Fruit ovate, or didymous; carpels with 5 obtuse ridges, and triple vittæ between.

1. S. *angustifólium.* Leaves pinnate, leafl. ovate, unequally lobed and serrated;
P. 8. (W.) 17. umbels opposite the leaves.—Ditches.
2. S. *latifólium.* Leaves pinnate, leafl. oblong-lanceolate, equally serrate;
P. 7, 8. (W.) 11. umbels terminal.—Rivers.

33. BUPLEU'RUM. *L.* Hare's-ear. Thorow-wax.

Cal.-teeth 0. Pet. roundish, retuse, with an involute, broad, retuse point. Fruit ovate-oblong; carpels with equal more or less prominent ridges. Vittæ 0.

* Leaves linear or lanceolate; stem branched; umbels shorter than invol.

1. B. *tenuissimum.* *A.* 8, 9. (Y.) E.-3. Umbels mostly sessile, of 3-5 fl's, both lateral and terminal; invol. of 5 setaceous bracts.—Salt marshes.

2. B. *aristátum.* *A.* 7. (Y.) E.-1. Umbels stalked, of more than 5 fl's, terminal; invol. of 3-5 lanceolate, somewhat awned bracts.—Rocks; Torquay.

* Leaves, especially the lower, broad.

3. B. *falcátum.** *P.* 8. (Y.) E.-1. Lower leaves elliptic-oblong, on long stalks; upper linear, sessile; each invol. of 5 bracts.—Near Ongar, Essex.

4. B. *rotundifólium.* *A.* 7. (Y.) E.-9. Leaves all oval, acute, perfoliate; general invol. 0, bracts of partial invol. mucronate.—Corn-fields.

34. TRI'NIA. *Hoffm.* Hone-wort.

Diœcious. Cal.-teeth 0. Pet. of the *barren fl's* lanceolate, with a narrow, involute point; of the *fertile* ovate with a short, inflexed point. Fruit ovate. Carpels with 5 prominent ridges, and single vittæ between.

1. T. *glabérrima.* *P.* 5, 6. (W.) 1. Glabrous; leaves tripinnate, leafl. linear-filiform; invol. 0, or of 1 bract.—Limestone Hills.

35. ÆGOPO'DIUM. *L.* Gout-weed. Herb-Gerarde.

Cal.-teeth 0. Pet. obcordate, with an inflexed point. Fruit oblong; stylopodium conical; carpels with 5 filiform ridges. Vittæ 0.

Æ. *Podagrária.* *P.* 6, 7. (W.) 18. Leaves twice or thrice ternate, leafl. ovate-acuminate, unequal at base, acutely serrate.—Damp places.

36. A'PIUM. *L.* Celery. Smallage.

Cal.-teeth 0. Pet roundish, entire, with a small, involute point. Fruit roundish-ovate, didymous; carpels with 5 filiform ridges, and single vittæ between. Invol. 0.

1. A. *gravéolens.* *B.* 7, 8. (—G.) 14. Glabrous; leaves pinnate or ternate, leafl. of the upper cuneate, notched at end.—Marshes near sea.

37. PETROSELI'NUM. *Hoffm.* Parsley.

Cal.-teeth 0. Pet. roundish, with a narrow, incurved point. Fruit ovate; carpels with 5 slender ridges, and single vittæ between.

1. P. *sativum.** *B.* 6-8. (—G.) 2. Leaves all tripinnate, shining, leafl. of the lower ovate-cuneate, trifid and toothed; umbel with many bracts.—Old walls.

2. P. *ségetum.* *B.* 8, 9. (W.) 8. Root-leaves pinnate, upper with linear very imperfect leafl.; umbels with few and unequal bracts.—Moist fields.

38. SI'SON. *L.* Bastard-stone-parsley.

Cal.-teeth 0. Pet. broadly obcordate, deeply emarginate, with an inflexed point. Fruit ovate; carpels with 5 filiform equal ridges, and single, abbreviated, clavate vittæ between.

S. *Amómum.* *B.* 8. (—Y.) E. S.-12. Lower leaves pinnate, with lobed, cut, and serrated leafl.; upper in narrow segments.—Damp places.

39. BU'NIUM. *L.* Earth, Pig, or Kipper-nut.

Cal.-teeth 0. Pet. obcordate, with a broad, obtuse, inflexed point. Fruit oblong; carpels with 5 slender, obtuse ridges, and 1-3 vittæ between. Stylopodium conical.

1. B. *flexuósum.* *P.* 5, 6. (W.) — General invol. of 1-3, partial of several bracts; fruit oval, 20. crowned by the erect styles; root a tubercle.—Pastures.

40. CA'RUM. *L.* Caraway.

Cal.-teeth 0. Pet. obcordate, with an acute, inflexed point. Fruit oblong; carpels with 5 ridges, and single vittæ between. Stylopodium depressed.

* General invol. 0, or of 1 bract; partial 0.

1. C. *Cárui.* *B.* 6. (W.) — Leaves bipinnate, leafl. cut into linear segments; stem 9. branched; root fusiform.—Pastures.

* General and partial invol's. of numerous bracts.

2. C. *verticillátum.* *P.* 7, 8. (W.) — Leaves pinnate, leafl. divided to the base into capillary, 1. spreading, apparently whorled segments; root fasciculate.—Marshes near the sea.

3. C. *Bulbocástanum.* *P.* 6. (W.) — Leaves tripinnate, leafl. in linear acute, not whorled seg- E-3. ments; root tuberous.—Fields on a chalky soil.

41. PIMPINE'LLA. *L.* Burnet-saxifrage.

Cal.-teeth 0. Pet. obcordate, with an inflexed point Fruit ovate; stylopodium conical; carpels with 5 slender, obtuse ridges, and many vittæ.

1. P. *mágna.* *P.* 7, 8. (—R.) — Leaves pinnate, leafl. all ovate, serrate, cut, the terminal E. I.-12. one (rarely the lateral) 3-lobed; invol. 0.—Shady places.

2. P. *Saxífraga.* *P.* 7, 8. (—R.) — Leaves of the stem bipinnate, with linear segments, of the 20. root roundish, serrate; invol. 0.—Dry pastures.

ORDER IX.—ARALIEÆ.

Trees, shrubs, or herbs, possessing aromatic properties. *Leaves alternate, without stip.* Fl. mostly in umbels. Cal. adnate, with ov., with an entire or cleft limb. *Pet.* 4, 5 or 10, rarely combined, or 0, *æstivation valvate.* Stam. 5, 8, or 10; anth. turned inwards, opening longitudinally. *Ov. more than 2-celled; styles as many as cells. Fruit* succulent, or dry, 3-5-celled, each cell *with* 1 *pendulous seed* adhering to pericarp; alb. fleshy; embr. generally small.

Herbs. Cal. 3-cleft. Pet. slightly cohering. . . .	1. ADOXA.
Climbing shrubs. Cal. 5-toothed. Pet. free. . . .	2. HEDERA.

1. ADO'XA. *L.* Moschatell.

Cal. ½-inferior, 3-cleft. Pet. 4-5, slightly cohering. Stam. 8-10, in pairs; anth. terminal, 1-celled. Berry 4-5-celled. Embr. minute.

A. *moschatellína.* *P.* 4, 5. (—G.) — Rhizome bearing scions; stem erect, simple; leaves of 19. root tri-ternate, of stem bi-ternate.—Shady woods.

2. HE'DERA. *L.* Ivy.

Cal. 5-toothed. Pet. broadest at base. Stam. 5-10. Style simple, or 5-10 and more or less combined. Berry 3-5-seeded.

1. H. *Hélix.* S. 10-12. (—G.) 20. Leaves coriaceous, ovate, or cordate, angularly 3-5-lobed, shining; umbels simple, downy, erect.—Walls; hedges.

ORDER. X.—CORNEÆ.

Trees or shrubs, with tonic febrifuge qualities. Leaves mostly opposite, entire; stip. 0. Fl's. cymose, or umbellate, with or without an invol. *Sep.* 4. *Pet.* 4, broad at base. *Stam.* 4, inserted with the pet. at the top of tube of cal. Ov. 2-celled; style filiform; stigma simple. Fruit fleshy, with a 2-celled nut. Seeds solitary, pendulous. *Embr. long, in axis of fleshy alb.*; rad superior.

1. CO'RNUS. *L.* Cornel. Dogwood.

Cal.-teeth 4. Pet. 4, superior. Stam. 4. Nut of the drupe 2-celled, 2-seeded.

1. C. *sanguínea.* S. 6. (W.) 15. Shrub; branches straight; leaves opposite ovate, cuspidate; invol. 0; fl. cymose.—Thickets.
2. C. *Suécica.* P. 7. (+P.) E. S.-4. Herb; leaves opposite, ovate, not cuspidate; invol. of 4 petaloid bracts; fl's. umbellate.—Moist pastures.

ORDER XI.—SANTALINEÆ.

Trees, shrubs, or herbs, possessing astringent properties. Cal. with a 4-5-cleft limb, and a valvate æstivation. *Cor.* 0. Stam. 4 or 5. *Ov.* 1-*celled, with from* 1-4 *ovules*, attached to a central placenta; style 1; stigma often lobed. Fruit 1-celled, hard, dry, and drupaceous, 1-seeded. *Embr. inverted, taper, in axis of a large, fleshy alb.*

1. THE'SIUM. *L.* Bastard-toadflax.

Cal. 4-5-cleft, funnel-shaped. Stam. 5, with a fascicle of hairs at base. Fruit crowned with the persistent cal.

1. T. *Linophýllum.* P. 6, 7. (W.) E.-4. Fl. in leafy racemes or panicles; fruit nearly globose, strongly ribbed; leaves linear-lanceolate, 3-nerved.—Chalky hills.
   β. *húmile.* fl. in spikes; leaves linear, fleshy, 1-nerved.

ORDER XII.—LORANTHEÆ.

Parasitical, shrubby plants, with entire, mostly opposite exstipulate leaves, and often diclinous fl's., possessing no remarkable qualities. Cal. sometimes 0, or of 3, 4, or 8 sep., arising from the rim of a fleshy expansion of the pedicel, which surrounds and adheres to the ov., usually with 3 bracts at base. *Pet.* 0. Stam. equal in number, and opposite to sep. *Ov.* 1-*celled; ovules with a naked nucleus*, erect or suspended from the point of a central placenta; stigma often sessile, simple. Fruit mostly succulent. Seed solitary, pendulous; *embr. longer than fleshy alb.*; cot. 0, or more than 2; rad. remote from hilum.

1. VI'SCUM. *L.* Misseltoe.

Fertile fl.:—cal. of 4 ovate, fleshy sep., united at base. Anth. adnate to them, many-celled. *Fertile fl's.*:—cal. of 4 erect, minute sep. Stig sessile. Seed sometimes with 2 embr.

1. V. *A'lbum.* P. 3-5. (—Y.) E.-12. — Stem repeatedly dichotomous, with sessile axillary clusters of about 5 fl.; leaves obovate-lanceolate.—Parasitic on trees.

ORDER XIII.—ARISTOLOCHIEÆ.

Herbs, or often climbing shrubs, with stimulating and tonic qualities. Stem obscurely exogenous in structure. Leaves simple, alternate, often with a stipule opposite each. Cal. ½-adherent, with a usually, irregularly-lobed, dilated limb. *Cor.* 0. Stam. 6-12, often adhering to the style. Ov. 6 or rarely 3 or 4-celled; stigma of as many rays as cells in ov. *Fruit* 3-6-*celled, many-seeded. Embr. minute in the base of a fleshy alb.*; cot. inconspicuous; rad. next hilum.

Cal. with an irregular limb. Stam. 6, gynandrous. . .	1. ARISTOLOCHIA.
Cal. campanulate, 3-fid. Stam. 12, free.	2. ASARUM.

1. ARISTOLO'CHIA. *L.* Birthwort.

Cal. tubular, swelling at base, the mouth dilated on one side. Anth. 6, sessile on the short style beneath the 6-rayed stigma.

1. A. *Clématis.* P. 7, 8. (—Y.) E.-2. — Stem erect, simple; leaves cordate, glabrous, stalked; fl. aggregate, upright.—Among old ruins.

2. A'SARUM. *L.* Asarabacca.

Cal. campanulate, 3-fid. Stam. 12; anth. attached to the middle of the fl. Stigma of 6 rays.

1. A. *Europæ'um.** P. 5. (+P.) E. S.-3. — Leaves binate, reniform, obtuse; fl. solitary, axillary, drooping, on a long stalk.—Woods.

ORDER XIV.—ONAGREÆ.

Herbs, or shrubs, mucilaginous and innocuous. Leaves simple. Fl. axillary or terminal. *Cal-limb* free, 2, *or* 4-*lobed;* the lobes often cohering. *Pet.* 2 *or* 4, twisted in æstivation, *rarely* 0. *Stam.* 2, 4, *or* 8. *Ov.* 2 or 4-*celled; placenta in axis; ovules horizontal, ascending;* style filiform; stigma capitate, or 4-lobed. Fruit a berry or capsule, with 2, 1-seeded, or 4 many-seeded cells; *seeds without alb.*; *rad. long, taper; cot. large and flat.*

* [1] Stam. 2. Pet. 2.	1. CIRCÆA.
* [2] Stam. 4. Pet. 4 or 0.	2. ISNARDIA.
* [3] Stam. 8. Pet. 4.	
Segments of cal. free. Seeds bearded. . . .	3. EPILOBIUM.
Segments of cal. combined. Seeds naked. . .	4. ŒNOTHERA.

1. CIRCÆ'A. *L.* Enchanter's-Nightshade.

Cal. with 2 segments. Pet. 2, obcordate. Stam. 2. Fruit 2-celled, 2-seeded.

1. C. *alpína.* P. 7, 8. (W.) — Leaves cordate, toothed, shining, as long as the petioles; 6. stem ascending, mostly glabrous.—Woods.
β. *intermédia.* — plant larger, more pubescent.
2. C. *Lutetiána.* P. 7, 8. (W.) — Leaves ovate, acuminate, toothed, opaque and downy, 19. longer than petioles; stem erect, pubescent.—Woods.

2. ISNA'RDIA. *L.*

Cal.-limb 4-cleft. Pet. 4 or 0. Stam. 4. Stigma capitate. Fruit obovate, 4-celled, 4-valved, many-seeded.

1. I. *palústris.* Pet. 0; fl. axillary, solitary; leaves opposite, ovate, acute, stalked; stem procumbent, rooting.—Wet places. Sussex. Hampshire.
A. 6. (G.) E.-1.

3. EPILO'BIUM. *L.* Willow-herb.

Cal-limb 4-parted; segments free, deciduous. Pet. 4. Caps. elongated, 4-sided, 4-valved, many-seeded; seeds bearded at one end.

* Stigma 4-cleft.

† Leaves glabrous, (margins and veins of 2 E. pubescent.)

1. E. *angustifólium.* Fl. irregular; stam. declinate; leaves linear-lanceolate, scattered, denticulate.—Shady places.
P. 7. (R.) 14.
β. *brachycárpum.* ped. longer than ov.; fruit spreading.
2. E. *montánum.* Fl. regular; stam. erect; leaves ovate, the lower shortly stalked, all toothed.—Dry, shady places.
P. 7. (R.) 20.
β. *lanceolátum.* leaves lanceolate, all stalked.

† Leaves hairy, sessile, opposite, especially the lower. Stem hairy or downy.

3. E. *hirsútum.* Cal. green; leaves clasping, ovate-lanceolate, deeply serrated; stem much-branched; root with scions.—Ditches.
P. 7, 8. (R.) 18.
4. E. *parviflórum.* Cal. coloured; leaves not clasping, lanceolate, slightly toothed; stem nearly simple; root fibrous.—Marshes.
P. 7. (R.) 20.

* Stigma undivided, very rarely 4-lobed.

† Leaves sessile,

5. E. *palústre.* linear-lanceolate, nearly entire, with a cuneate base; stem round, often with 2 hairy, not elevated lines.—Wet places.
P. 7, 8. (Y.) 19.
6. E. *tetragónum.* Leaves oblong-lanceolate, denticulate, with a rounded base, some decurrent; stem with 4 angles; scions short, terminating in a rosette of leaves.—Damp places.
P. 7, 8. (R.) 19.
β. *virgátum.* leaves none decurrent; scions filiform, not ending in a rosette.

† Leaves stalked, or attenuated at base; cal. green.

‡ Fl's numerous; leaves ovate-acuminate, or lanceolate,

7. E. *róseum.* all finely toothed; stem somewhat 2-edged, with 2 or 4 elevated, glabrous lines.—Wet places.
P. 7, 8. (R.) E. S.-5.
8. E. *alsinifolium.* The lower leaves entire; stem rounded, with 2 elevated, hairy lines; ov. pubescent.—Mountain streams.
P. 7. (R.) E. S.-2.

‡ Fl's. 2-3; leaves ovate-oblong, or lanceolate,

9. E. *alpínum.* attenuated below, nearly entire; stem with elevated, hairy lines; root with scions.—Mountain streams.
P. 7. (R.) S.-3.

4. ŒNOTHE'RA. *L.* Evening-primrose.

Cal. with 4 deep, reflexed, more or less combined segments. Pet. 4. Caps. elongated, with 4 valves, and many naked seeds.

1. Œ. *biénnis.** Leaves ovate-lanceolate, flat, toothed; stem somewhat hairy; fl's. sessile; pet. half as long as tube of cal.—Sandy soil.
B. 7-9. (Y.) E.-4.

ORDER XV.—HALORAGEÆ.

Mostly aquatic herbs, often with diclinous fl's. *Cal. rarely inferior, with a minute limb or* 0. *Pet. minute or* 0. *Stam.* 1-8. Ov. 1 or more-celled; style 0; stigmas equalling the number of cells. Fruit dry, indehiscent, 1 or more-celled. *Seed solitary, pendulous,* with a small quantity of fleshy alb.; embr. straight; rad. superior; *cot. minute.*

Monœcious: stam. 8. Cal. inferior, 4-parted. . . .	1. MYRIOPHYLLUM.
Perfect; stam. 1. Cal.-limb superior, very minute. . .	2. HIPPURIS.

1. MYRIOPHY'LLUM. *L.* Water Milfoil.

Monœcious. Cal. inferior, 4-parted. Pet. 4; small or 0 in the pistilliferous fl's. Stam. 8. Stig. 4. Fruit separable into 4, 1-seeded carpels. Leaves whorled.

1. M. *alternifŏlium.* *P.* 7, 8. (—R.)	10?	Sterile fl's. alternate, on an erect, leafless spike, nodding in bud, with 1-3 fertile ones at base; bracts pectinated; leaves 3 in a whorl.—Ponds.
2. M. *spicátum.* *P.* 6, 7. (—R.)	20.	Fl's. forming a leafless spike, erect in bud; bracts entire; leaves 4-whorled, pectinated.—Ponds.
3. M. *verticillátum.* *P.* 7, 8. (—R.)	11.	Fl's. all axillary, whorled; bracts longer than fl's., and with the leaves pinnated.—Ponds.

2. HIPPU'RIS. *L.* Mare's-tail.

Fl's. perfect. Cal.-limb superior, forming a very indistinct rim to ov. Pet. 0. Stam. 1. Style 1. Fruit a small, 1-seeded nut.

1. *H. vulgàris.* *P.* 6, 7. (G.)	16.	Leaves 6, 8, or 10 in a whorl, linear, with a callous point. fl's. in the axillæ of each of the upper leaves.—Ponds.

SUB-CLASS II.—HYPOGYNOUS EXOGENS.

EXOGENS, with perfect flowers, the calyx not adherent to ov., and the stamens and corolla inserted either on the calyx (perigynous), or under the ov. (hypogynous).

DIVISION III.—APOPETALOUS HYPOGYNOUS EXOGENS.

HYPOGYNOUS EXOGENS, with the corolla composed of distinct petals, or altogether wanting.

ORDER XVI.—CRASSULEÆ.

Succulent herbs or shrubs, with entire or pinnatifid, exstipulate leaves, having tonic, refrigerant, or acrid properties. Fl. rarely diœcious. *Sep.* 3-20, more or less united at base. *Pet. as many as sep., sometimes cohering,* inserted at base of cal. Stam. inserted with pet., as many, or twice as many. *Carpels as many as pet., distinct, each having a scale at its base. Fruit of numerous follicles.* Seeds variable; *embr. straight, in axis of a small, fleshy alb.*; rad. pointing to hilum.

* [1] Sep. 3 or 4.	
Fl's. perfect. Stam. 3 or 4.	1. TILLÆA.
Fl's. imperfectly diœcious. Stam. 8.	2. RHODIOLA.

* 2 Sep. 5. Stam. 10.	
Cor. synpetalous, 5-cleft.	3. COTYLEDON.
Pet. distinct, 5.	4. SEDUM.
* 3 Sep., pet., and carpels mostly 12 or more. . . .	5. SEMPERVIVUM.

1. TILLÆ'A. *L.*

Sep., pet., stam., and carpels 3 or 4; each carpel 2-seeded. Hypogynous scales 0.

1. T. *muscósa.* *A.* 5-6. (W.) — Stems branched and decumbent at base; fl. axillary, sessile, mostly 3-cleft.—Barren heaths. 1.

2. RHODI'OLA. *L.* Rose-root.

Fl. imperfectly diœcious. Sep., pet., and carpels 4, the latter many-seeded. Stam. 8. Hypogynous scales emarginate.

R. *rósea.* *P.* 6, 7. (Y.) — Root fleshy; leaves oblong, serrated at tip, smooth; fl's. in a compact, terminal cyme.—Wet, alpine rocks. 4.

3. COTYLE'DON. *L.* Penny-wort.

Sep. 5. Pet. cohering in a tubular, 5-cleft cor. Stam. 10, epipetalous. Carpels 5, each with an entire scale at its base.

1. C. *umbilicus.* *P.* 6-8. (g W.) — Leaves peltate, crenate, depressed in centre; stem with a usually simple raceme of pendulous fl's.; upper bracts minute, entire.—Rocks, walls. 7.
2. C. *lútea.** *P.* 7. (Y.) — Lower leaves only somewhat peltate, upper crenate, or toothed; raceme of erect fl.; bracts toothed.—Yorkshire. Somersetshire. E.-?

4. SE'DUM. *L.* Stone-crop. Orpine.

Sep. and pet. 5. Stam. 10. Carpels 5, each with an entire scale at its base.

* Leaves sessile, rounded, but not produced beyond the base.
† Leaves flat,
1. S. *Telèphium.* *P.* 7, 8. (P.) — oval-oblong, serrated, upper rounded at base; stem erect, spotted; corymbs dense, leafy, root thick.—Hedge banks. 18.
β. *purpúreum.* leaves from oblong to lanceolate, all attenuated at base.
† Leaves terate or gibbous,
‡ scattered on the stems; flowering stems erect.
2. S. *villósum.* *P.*? 6-8. (—R.) E. S.-8. — Glandular-pubescent; leaves linear-oblong, flat above; pet. ovate; root small, without shoots.—Wet, rocky places.
3. S. *álbum.* *P.* 7, 8. (W.) — Glabrous; leaves oblong, cylindrical; pet. lanceolate; root small, producing procumbent, rooting shoots.—Rocks. 6.
β. *túrgidum.* leaves gibbous beneath.
‡ Leaves opposite on the barren shoots.
4. S. *dasyphýllum.* *P.*? 6, 7. (W.) — Leaves ovate, obtuse, gibbous; pet. and sep. ovate, obtuse; panicle glandular-pubescent.—Rocks, walls. 5.
* Leaves produced beyond the base,
† ovate, thick, tumid, mostly alternate.
5. S. *A'nglicum.* *A.* 7, 8. (W.) — Cyme of 2 smooth branches; pet. lanceolate, very acute; sep. ovate, bluntish.—Sandy places. 8.

6. S. *ácre.* Cyme of 3 smooth branches; pet. lanceolate, acute; sep.
P. 6, 7. (Y.) 20. ovate, obtuse, gibbous at base.—Walls, sandy places.
† Leaves from lanceolate to subulate, not ovate.
‡ terate, not flattened,
7. S. *sexanguláre.* those of the barren shoots in alternate whorls of threes,
P. 7. (Y.) E. S.-3. making 6 rows along the stem, linear, obtuse, spreading; sep. and pet. lanceolate, acute.—Old walls.
8. S. *reflexum.* Leaves scattered, subulate, the lower recurved; sep. ovate,
P. 7, 8. (Y.) 18. acute; pet. lanceolate, obtuse.—Walls.
β. *glaúcum.* leaves more slender, glaucous, straight.
‡ Leaves flattened,
9. S. *rupéstre.* linear-lanceolate, glaucous, those of the branches erect, in
P. 6, 7. (Y.) E.-2. 5 close rows; fl's. imperfectly cymose.—Limestone rocks.
10. S. *Forsteriánum.* Leaves lanceolate, not glaucous, of the branches spreading.
P. 6, 7. (Y.) E.-1. in many rows; fl's. in a compact cyme.—Rocks, Wales,

☞ These last three species are probably varieties.

5. SEMPERVI'VUM. *L.* Houseleek.

Sep., pet., and carpels 6-20. Stam. twice as many. Hypogynous scales laciniated.

1. S. *tectórum.** Leaves ciliated, glabrous, succulent; pet. entire, hairy at
P. 7. (R.) 17. margins; shoots spreading.—Walls, and cottage roofs.

ORDER XVII.—LYTHRARIEÆ.

Mostly herbs possessing astringent properties. *Leaves opposite*, entire; stip. 0. Fl's. regular or irregular, Cal. synsepalous, lobed, valvate, often with intermediate teeth. *Pet. inserted between lobes of cal.*, deciduous or 0. Stam. inserted within the tube of cal., once, twice, or thrice as many as pet. *Ov.* free, 2-4-*celled; style filiform or short;* stigma capitate. Fruit a dehiscent, membranous capsule. *Seeds numerous, adhering to a central placenta; alb.* 0; embr. straight; rad. turned towards the hilum.

Cal. tubular.	Style long.	1. LYTHRUM.
Cal. campanulate.	Style short.	2. PEPLIS.

1. LY'THRUM. *L.* Purple Loosestrife.

Cal. tubular, cylindrical, with 4-6 large, and as many intermediate, small, subulate teeth. Pet. 4-6. Stam. 1, 2, or 3 times as many as pet. Style filiform.

1. L. *hyssopifólium.* Stam. 6; leaves alternate, linear-lanceolate, obtuse; fl's.
A. 6-9. (P.) E. I.-3. axillary, solitary, with 2 minute bracts.—Damp places.
2. L. *Salicária.* Stam. 12; leaves opposite, lanceolate, from a cordate base;
A. 7, 8. (P.) 17. fl. in a whorled, leafy spike; bracts 0.—Ditch-banks.
β. *canéscens.* leaves downy, with crisped hairs.

2. PE'PLIS. *L.* Water-purslane.

Cal. campanulate, with 6 large and 6 small, subulate teeth. Pet. 6, minute, or 0. Stam. 6. Style very short.

1. P. *Pórtula.* Leaves opposite, obovate, stalked; fl's. axillary, solitary,
A. 7, 8. (—R.) 19. sessile; stam. 6; stem prostrate.—Damp places.

ORDER XVIII.—SAXIFRAGEÆ.

Herbs with astringent properties. Cal. superior or inferior, cohering more or less below. *Pet.* 5, inserted between the sep., *or* 0. *Stam. either inserted into the calyx, or beneath the ov.* *Ov.* superior, or ½-superior, of 2 carpels, cohering towards the base, with 2 cells and *an axile placenta, or* less frequently with 1 cell and *sutural placentæ. Styles distinct.* Carpels divaricating when ripe. *Seeds numerous*, very minute. *Embr. taper, in axis of a small, fleshy alb.*, the radicle next the hilum.

1. CHRYSOPLE'NIUM. *L.* Golden-Saxifrage.

Cal. superior, 4 or 5-cleft, somewhat coloured. Cor. 0. Caps. with 2 beaks, many-seeded.

1. C. *alternifólium.* *P.* 4. 12. Leaves alternate, lower ones sub-reniform, upon very long petioles.—Among rocks and springs.
2. C. *oppositifólium.* *P.* 4, 5. 18. Leaves opposite, lower ones roundish-cordate, stalked, wavy.—Damp, shady places.

2. SAXI'FRAGA. *L.* Saxifrage.

Cal. superior or inferior, or ½-inferior, in 5 segments. Pet. 5. Caps. with 2 beaks, 2-celled, 2-seeded, opening between the beaks. Placentæ attached to the dissepiment.

* Cal. inferior, reflexed.

† Leaves reniform (1), or cordate (2), at the base.

1. S. *Géum.* *P.* 6. (W. ∴ R.) S. I.-1. Leaves roundish, broader than long, acutely crenate or serrate, more or less hairy; petioles linear, channelled.—Mountains.
   - β. *dentáta.* leaves glabrous, more sharply toothed.
   - γ. *pólita.* leaves light green, glabrous, shining, sharply toothed.
   - δ. *minor.* leaves smaller, hairy on both sides; fl's not spotted; scape slender.
2. S. *hirsúta.* *P.* 5, 6. (W. ∴ R.) I.-1. Leaves longer than broad, acutely crenate, with cartilaginous edges, hairy, the petioles linear, channelled, tapering upwards, much longer than leaves.—Killarney.

† Leaves not reniform or cordate at the base.

‡ Stem leafless; fl's panicled.

§ Leaves stalked.

3. S. *élegans.* *P.* 5, 6. (W ∴ R.) I.-1. Leaves round, smooth, shining, acutely serrated, not tapering at the base, (forming rosettes); petioles linear, flat above, hairy on the edges, as long as the leaves.—Turk Mountain, Killarney.
4. S. *umbrósa.* *P.* 6. (W. ∴ R.) I.-3. Leaves obovate, smooth, with sharp, cartilaginous crenatures, tapering at the base into the flat, dilated petioles.—Mountains, Kerry, Donegal.
   - β. *punctáta.* leaves roundish, dentate-serrate; petioles elongated.
   - γ. *serratifólia.* leaves oblong-ovate, glabrous, light green, with deep, acute serratures; petioles oblong, flat.

§ Leaves nearly sessile,

5. S. *stellāris.* — elliptic-cuneate, coarsely dentate-serrate, tapering and entire at base; panicle corymbose, of few fl's.—Wet mountain rocks.
P. 7. (W. ‖ Y.) 5.

β. *integrifolia.* — leaves quite entire.

γ. *repens.* — stem creeping.

‡ Stem leafy, erect; fl's solitary,

6. S. *Hirculus.* — erect; leaves lanceolate, entire, those of root narrowing into a foot-stalk; sep. at length reflexed, obtuse, downy at the margin and upper part of stem.—Wet moors.
P. 8. (Y.) 4.

* Cal. superior, or ½-superior, erect or spreading, not reflexed.

† Leaves neither lobed nor divided.

‡ Stem leafless, erect; fl's in a dense head.

7. S. *nivālis.* — Leaves roundish, obovate, acutely crenate, narrowed into a foot-stalk.—Alpine rocks.
P. 7. (W.) E. S.-1.

‡ Stem leafy,

8. S. *oppositifōlia.* — procumbent; leaves opposite, imbricated, oblong, obtuse, ciliated; fl's solitary, terminal.—Moist, alpine rocks.
P. 4, 5. (P.) 2.

9. S. *azoides.* — Stem ascending; leaves alternate, linear-oblong, mucronate, ciliated, convex beneath.—Wet, alpine places.
P. 7-9. (Y. ∴) 4.

β. *dentāta.* — leaves with several strong teeth.

10. S. *pygmæ'a.* — Leaves linear, abrupt, smooth; fl's corymbose; pet. obovate, scarcely longer than the very obtuse, glandular cal.—Highlands.
P. 5. (W.) S.-1.

† Leaves more or less lobed or divided.

‡ Plants having barren, tufted shoots at base.

11. S. *pedatifida.* — Fl's numerous, panicled; root-leaves, and those of the short, sterile shoots, long-stalked, divided into 3 deep, linear-lanceolate, acute, spreading segments, the lateral ones bifid; panicle cymose; cal. superior, as long as ov. —Clova Mountains.
P. 5. (W.) S.-1.

12. S. *cæspitōsa.* — Fl's 1-5; root-leaves crowded, 3-5-cleft, obtuse, very veiny, fringed, the lowermost undivided; cal. ½-inferior; sep. obtuse; pet. rounded, triple-ribbed. — Mountains, North Wales. Aberdeen. Kerry.
P. 5. (W.) 1.

β. *decipiens.* — larger, the fl's more numerous.

13. S. *hypnoides.* — Fl's 1-5; root-leaves 3 or 5-cleft; those of the barren shoot undivided, or 3-cleft, all bristle-pointed, more or less fringed; sep. ovate, pointed; pet. roundish, obovate. —Alpine rocks.
P. 5, 6. (W.) 6.

β. *platypétala.* — leaves of barren shoots undivided, or 3-cleft; pet. broad.

γ. *hirta.* — leaves crowded, all 3-cleft; stem ascending, hairy.

δ. *affi'nis.* — root-leaves 5-cleft, those of shoots 3-cleft; lobes linear, pointed; sep. subulate; pet. inflexed at edges.

ε. *incurvifōlia.* — nearly glabrous; segments of leaves obtuse, incurved; sep. ovate, acute; pet. roundish, emarginate.

ζ. *denudāta.* — segments of leaves linear-subulate, acute; sep. lanceolate, mucronulate; pet. obovate, emarginate.

η. *elongélla.* — root-leaves 3 or 5-cleft, all bristle-pointed, slightly fringed; primary flower-stalks very long, simple, naked; sep. pointed; pet. obovate.

l. lætevirens. leaves 5 or 3-parted; lobes linear, acute; sep. lanceolate, mucronate; pet. spathulate, emarginate.

‡ Plants having no barren shoots; stems leafy.

§ Stem simple, 1-fl'd.

14. S. *cérnua.* *P.* 6-8. (W.) S.-1. Root-leaves reniform, on long petioles, palmately lobed; upper nearly sessile, sub-trifid, uppermost, entire; axils bearing bulbs; cal. quite inferior.—Breadalbane Mountains.

§ Stem branched, panicled,

15. S. *rivularis.* *P.* 8. (W.) S.-1. few-fl'd, pubescent; root-leaves sub-reniform, 3-5-palmately lobed, glabrous, on long stalks; upper bracts lanceolate, entire.—Moist, alpine rocks.

16. S. *granuláta.* *P.* 6, 7. (W.) 17. Hairy and glandular; root-leaves on long, channelled stalks, reniform, crenately lobed, those of stem nearly sessile, with 3-5 acute lobes; not granulated.—Gravelly places.

17. S. *tridactylites.* *A.* 4-7. (W.) 15. Viscid and glandular; leaves cuneate, 3-5-fid, with a flat petiole, the lowest ones often simple and spathulate; uppermost bracts undivided; pedicels 1-fl'd with 2 bracts at base.—Walls and dry banks.

*** I had hoped to have been favoured with a contribution on the British Saxifrages, by a gentleman who has long and diligently studied these plants; but unavoidable circumstances have prevented him from preparing the manuscript in time for the press. I am therefore compelled to substitute the preceding arrangement and descriptions of the genus, in the hope of being able, at some future time, to insert a contribution on this subject by one better qualified for the task than I can pretend to be.

ORDER XIX.—ROSEÆ.

Trees, shrubs, or herbs with astringent properties, and all, except the *Amygdalidæ* which abound in prussic acid, innocuous. *Leaves alternate, with stip. Fl's regular,* often diclinous. Cal. 4 or 5-lobed, free, or sometimes adherent to ov. *Pet with the odd segment anterior, rarely* 0. *Stam.* usually indefinite, *inserted on cal. Ov. of* 1 *or more free,* rarely cohering *carpels;* styles distinct. Fruit various; *seeds* 1 *or rarely more* in each carpel; embr. straight; alb. 0.

* Pet. 0. Mostly herbs.
- † Fl's diclinous. Stam. 20-30. . . . . 1. POTERIUM.
- † Fl's perfect.
  - Stam. 4. Cal. 4-cleft, with 2 or 3 outer scales. . . 2. SANGUISORBA.
  - Stam. 1-4. Cal. 8-parted, the outer segments the smaller. 3. ALCHEMILLA.

* Pet. 4, 5, 8 or 9.
- † Trees or shrubs, often with spines or prickles.
  - ‡ Styles 1-5. Shrubs or trees often bearing spines.
    - § Ov. of 1 free carpel, becoming a drupe, marked by a suture on one side. . . . . 4. PRUNUS.
    - § Ov. of 1 or more carpels, adhering to the cal. and to one another.
      - ‖ Fl's solitary. . . . . 5. MESPILUS.
      - ‖ Fl's clustered.
        - ¶ Thorny trees. Carpels bony, 1 or 2-seeded. 6. CRATÆGUS.
        - ¶ Trees without thorns.
          - Fl's all perfect. Carpels of fruit cartilaginous, cohering at the centre. . 7. PYRUS.
          - Fl's polygamous. Nuts of the fruit not cohering at the centre. . . 8. COTONEASTER.

‡ Styles more than 5. Prickly shrubs.
Cal. urceolate, including the carpels, and terminating in 5 segments. . . . . } 9. ROSA.
Cal. flat, 5-cleft. . . . . 12. RUBUS.
† Herbs or under shrubs which are never prickly.
‡ Cal. 4 or 5-parted, with alternate, smaller segments.
§ Stam.-5. . . . . 13. SIBBALDIA.
§ Stam. more than 5.
‖ Pet. 4 or 5.
Styles terminal, persistent, hooked at end. . 14. GEUM.
Styles lateral, withering, not hooked at end.
Leaves pinnate; or ternate, in which case the uppermost stem-leaves or bracts are stipuled. . . . . } 15. POTENTILLA.
Leaves ternate, the bracts not stipuled. . 16. FRAGARIA.
‖ Pet. 8 or 9. . . . . 10. DRYAS.
‡ Cal. 5-parted, without alternate segments.
Fl's spiked. Carpels 2, 1-seeded, enclosed in cal. 11. AGRIMONIA.
Fl's panicled or cymose. Carpels more than 2, 2 or more-seeded, not enclosed in cal. . . } 17. SPIRÆA.

Tr. I. *SANGUISORBIDÆ. Apetalous. Cal.* 4 *or* 8-*cleft, persistent, the tube enclosing* 1-3 *akenia.*

1. POTE'RIUM. *L.* Salad-burnet.

Fl's in monœcious heads, the upper ones fertile. *Barren fl's:*—Cal. in 4 deep segments. Stam. 20-30, with long, flaccid fil. *Fertile fl's:*—Cal. urceolate, with 4 deciduous teeth. Pistils 2; stigmas tufted.

1. P. *Sanguisórba.* *P.* 6-8. (P.) 12. Herbaceous, unarmed; stem slightly angular; cal. 4-angular in fruit; leaves pinnate.—Dry soil.

2. SANGUISO'RBA. *L.* Burnet.

Cal. 4-cleft, coloured, with 4 scales or bracts at base. Stam. 4. Fruit 1 or 2-seeded, surrounded by the persistent base of cal.

1. S. *officinális.* *P.* 6-8. (+P.) 8. Spikes ovate; stam. as long as cal.; leaves pinnate, glabrous, leafl. cordate-oblong.—Damp pastures.
β. *média.* spikes cylindrical.

3. ALCHEMI'LLA. *L.* Lady's-mantle.

Cal. 8-cleft, outer segments the smaller. Stam. 1-4. Fruit 1 or 2-seeded, surrounded by the persistent cal.

* Leaves reniform, 7-9-lobed,
1. A. *vulgáris.* *P.* 6-8. (—G.) 18. the lobes rounded, serrated; fl's in lax, terminal, corymbose clusters.—Dry, hilly pastures.
β. *mínor.* leaves very pubescent.
* Leaves palmate or digitate.
2. A. *arvénsis.* *A.* 5-8. (—G.) 20. Leaves palmately 3-fid., cuneate at base, pubescent, lobes 3-toothed at end; fl's sessile, axillary.—Dry places.
3. A. *alpína.* *P.* 6, 7. (—G.) 2. Radical leaves digitate, in 5-7, oblong, obtuse divisions, serrated at end, silky beneath; fl's in interrupted spikes.—Mountains.

4. A. *conjúncta.* *P.* 6, 7. (—G.) E. S.-1. Radical leaves palmate, in 5-7, oblong, obtuse divisions, the lateral ones produced beyond the base, and approximating; in other respects as last. —Clova Mountains. Gatesgarth pass, Cumberland.

Tr. II. *AMYGDALIDÆ. Pet.* 5. *Fruit free, a solitary drupe, with* 1-2 *pendulous seeds. Cal. deciduous.*

4. PRU'NUS. *L.* Sloe, Plum, Cherry.

Cal. 5-cleft. Pet. 5. Drupe fleshy, its nucleus with slightly prominent seams.

* Ped. solitary, or in pairs; young leaves convolute; fruit with bloom.

1. P. *spinósa.* *S.* 4, 5. (W.) 20. Ped. mostly solitary, glabrous; branches very spiny; leaves elliptical, glabrous; fruit globose.—Hedges.
   β. *insititia.** ped. in pairs, downy; branches slightly spiny; leaves downy beneath; fruit globose; shrub.
   γ. *doméstica.** ped. in pairs, glabrous; spines 0; leaves ovate-lanceolate, hairy at mid-rib beneath; fruit oblong; tree.

* Ped, in racemes or umbels; young leaves conduplicate; fruit without bloom.

2. P. *pádus.* *T.* 5. (W.) 13. Fl's in pendulous racemes; leaves obovate, or oval, finely serrated, glabrous.—Woods.
3. P. *cérasus.* *S.* 5. (W.) E.-17. Fl's in nearly sessile umbels; leaves oblong-obovate, doubly crenate-serrate, somewhat downy beneath; tube of cal. not contracted; sep. crenate-serrate.—Hedges.
   β. *ávium.* leaves oblong-obovate, suddenly cuspidate, inciso-serrate slightly downy; tube of cal. contracted; sep. entire.—Woods.

Tr. III. *POMIDÆ. Fruit a* 1-5-*celled pome, the cells lined with a cartilaginous or bony substance.*

5. ME'SPILUS. *L.* Medlar.

Cal.-segments foliaceous. Pet. roundish. Disk large. Styles 2-5. Fruit turbinate, the upper ends of the bony cells exposed.

1. M. *Germánica.* *T.* 5, 6. (W.) E.-1. Leaves lanceolate, undivided, slightly downy; fl's solitary, terminal; when wild, spiny.—Hedge near Reigate.

6. CRATÆ'GUS. *L.* Hawthorn or May.

Cal.-segments acute. Pet. roundish. Styles 1-5. Fruit oval or round, concealing the 1-5 bony carpels.

1. C. *Oxycántha.* *T.* 5, 6. (W.) 20. Spinous; leaves glabrous, cut into 3-5 deeply serrated segments, cuneate at base; style 1-2.—Hedges.
   β. *eriocárpa.* cal.-tube densely hoary.

7. PY'RUS. *L.* Apple. Pear. Quicken or Service Tree.

Cal. 5-toothed. Pet. 5. Styles 2-5. Fruit fleshy, with 5 cartilaginous, distinct, 2-seeded cells.

* [1] Leaves not lobed, ovate serrated, acute.

1. P *communis.* Styles free to the base; ped. corymbose; fruit turbinate.—
T. 4, 5. (W.) 10. Woods and hedges.

2. P. *Málus.* Styles combined at base; ped. in sessile umbels; fruit globose.—Woods and hedges.
T. 5. (—R.) 18.

β. *tomentósa.* ped., cal.-tube, and leaves below pubescent.

* [2] Leaves lobed, not compound, or only so at base,

3. P. *A'ria.* cut and serrated, or slightly lobed towards apex, white and downy beneath; fl's corymbose; fruit globose.—Mountain woods.
T. 5. (W.) 11.

β. *intermédia.* leaves doubly serrate, deeply lobed towards the middle of the leaf.

γ. *pinnatífida.* leaves deeply serrate near the apex, pinnatifid or pinnate below.

4. P. *torminâlis.* Leaves ovate or cordate, lobed, glabrous; lobes triangular-acute, serrated, lower lobes spreading.—Woods.
T. 4, 5. (W.) E.-10.

* [3] Leaves pinnate, glabrous above, downy beneath,

5. P. *Aucupária.* leafl. serrated; fl's and fruit corymbose, the latter small, globose, red.—Woods.
T. 5, 6. (W.) 18.

8. COTONEA'STER. *Lindl.*

Fl's polygamous. Pet. 5, short, erect. Stam. erect, as long as the 5, short, erect teeth of cal. Fruit turbinate, its nuts adhering to the sides of cal., but not cohering at centre.

1. C. *vulgáris.* Leaves ovate, rounded at base; cal. smooth; ped. slightly downy.—Cliffs.
S. 5. (—R.) E.

Tr. IV. *ROSIDÆ. Fruit of numerous dry, hairy akenia, enclosed by, but merely attached to the inside of the fleshy tube of the cal.*

9. RO'SA. *L.* Rose.

Cal. urceolate, terminating in 5 segments. Pet. 5, and with the numerous stam. inserted on the rim of cal.-tube.

* Shoots bearing setæ. Prickles mostly straight, scattered, slender.

† Bracts large. Sep. long, simple.

1. R. *Dicksoni.** Leafl. oval, irregularly and doubly serrated, hoary; fruit ovate-urceolate.—South of Ireland?
S. 6. (—R.) I.-1.

2. R. *cinnamómea.** Leafl. lanceolate-oblong, simply serrated, downy and glandulose beneath.—Hedges.
S. 5. (—R.) 1.

† Bracts small or 0.

‡ Leafl. doubly serrated, hairy and glandular beneath. Setæ few.

3. R. *involúta.* Prickles crowded, very unequal, straight; sep. mostly simple, slightly leafy, nearly as long as cor.; fruit globose-urceolate, setose.—Mountainous places.
S. 6. (W. *v.*—R.) S. I.-1.

4. R. *Sabíni.* Prickles scattered; sep. somewhat pinnate; fruit globose, or slightly urceolate, setose: in other respects as last.—Rocky places.
S. 6. (—R.) 6.

β. *Doniána.* leaves very hairy; sep. almost simple.

γ. *grácilis.* larger prickles falcate; sep. as last.

‡ Leafl. simply serrate, their disk without glands.

§ Prickles few or scattered,

5. R. *rubélla.* S. 5. (—R.) E. S.-1. nearly equal, uniform, slender; setæ dense; leafl. naked; fruit urceolate or oblong.—Sea-coast, Northumberland. Banks of Dee.

6. R. *Hibérnica.* S. 5-10. (—R.) I.-1. Prickles unequal, larger, somewhat falcate; setæ few; leafl. hairy beneath; fruit nearly globular.—Down. Derry.

§ Prickles numerous, crowded, very unequal, straight.

7. R. *spinosissima.* S. 5. (+W.) 12. Leaves not hairy above; sep. entire, half as long as cor., acuminate; fruit nearly globular, erect.—Sandy heaths.

β. *pilósa.* dwarf; leaves acute, hairy beneath.

8. R. *Wilsoni.* S. 6. (—R.) E.-1. Leaves hairy on both sides; sep. mostly simple, shorter than pet.; fruit ovate-urceolate.—Near Bangor.

* Setæ mostly 0, or very few.

† Leaves glandulose; leafl. doubly serrated, downy or hairy.

‡ [1] Prickles uniform, nearly straight and equal.

9. R. *villósa.* S. 6, 7. (R.) 12. Sep. nearly simple, connivent in fruit; root-shoots straight, erect, coloured.—Hedges and thickets.

10. R. *tomentósa.* S. 6, 7. (—R.) 12. Sep. copiously pinnate, spreading in fruit; root-shoots mostly arched.—Hedges and thickets.

β. *fœ'tida.* leafl. nearly smooth above.

‡ [2] Prickles uniform, uncinate, mostly unequal.

11. R. *inodóra.* S. 5, 7. (R.) E. I.-8. Sep. doubly pinnate, mostly deciduous; ramuli without setæ; fruit elliptical or roundish.—Hedges.

12. R. *micrántha.* S. 7, 8. (R.) E. I.-10. Sep. pinnate, elongated, deciduous; ramuli with few setæ; fruit small, ovate.—Hedges and thickets.

‡ [3] Prickles of various forms, larger uncinate, smaller subulate. Sep. and pinnæ elongated and narrow, persistent.

13. R. *rubiginósa.* S. 6, 7. (R.) 17. Leafl. rounded at base, rugose, opaque; fruit turbinate.—Bushy places.

14. R. *sépium.* S. 6. (R.) E.-2. Leafl. acute at each end, shining; fruit ovate, rounded at base.—Hedges.

† Leaves without glands.

‡ Styles united into a column, mostly protruding from cal. Leafl. simply serrate; styles hairless; sep. sparingly pinnate.

15. R. *systýla.* S. 6, 7. (—R.) E.-8. Root-shoots nearly erect, arched; central carpels stalked; prickles uniform uncinate.—Thickets.

16. R. *arvénsis.* S. 6, 7. (—R.) 16. Root-shoots long, trailing; carpels all sessile; prickles unequal, uncinate, slender on ramuli.—Thickets.

‡ Styles distinct, included in cal. Prickles uniform, hooked.

17. R. *canina.* S. 6, 7. (—R. *v.* W.) 20. Sep. fully pinnate, deciduous; leafl. simply or doubly serrate, naked, or slightly hairy; bracts short.—Hedges.

α. *canina.* leafl. naked, carinate; serratures simple.

β. *sarmentácea.* leafl. same; serratures compound.

γ. *surculósa.* leafl. naked, flat; serratures simple.

δ. *dumetórum.* leafl. hairy, flat.

ε. *Forsteri.* leafl. hairy, not flat.

18. R. *bractéscens.* S. —. (—R.) E.-? Sep. fully pinnate, deciduous; leafl. simply serrated, downy beneath; bracts overtopping fruit.—Ulverston, Lancashire.

19. R. *cæ'sia.* S. 6. (—R.) ? Sep. sparingly pinnate; leafl. doubly serrated, downy; shoots assurgent; fruit elliptical.—Thickets.

Tr. V. *POTENTILLIDÆ. Fruit of numerous akenia or drupes, placed on a fleshy receptacle, not included in the herbaceous cal.*

10. DRY'AS. *L.* Avens.

Cal. 8-10-cleft, its segments equal and in 1 row. Pet. 8-9. Stam. numerous. Fruit of numerous akenia, tipped with long, feathery tails.

1. D. *octopétala.* *P.* 6, 7. (W.) 2.	Pet. 8; leaves crenate-serrate, obtuse; cal. hemispherical at base; sep. acute, covered with red hairs.—Alpine situations.
β. pilósa.	sep. slightly pointed, covered with dark hairs; segments of leaves acute.—Clare.
γ. depréssa.	sep. obtuse, rounded at end; base of cal. truncate, nearly flat.

11. AGRIMO'NIA. *L.* Agrimony.

Cal. turbinate, covered with hooked bristles, 5-cleft. Stam. 7-20. Fruit of 2 indehiscent carpels, invested by the hardened cal.

1. A. *Eupatória.* *P.* 6, 7. (Y.) 20.	Leaves interruptedly-pinnate, leafl. deeply serrated; the terminal one stalked; spikes long, lax.—Waste places.

12. RU'BUS. *L.* Bramble.

Cal. 5-parted, concave or flattish. Pet. 5. Stam. numerous. Fruit of several 1-seeded, juicy drupes, placed upon a protuberant, spongy receptacle. Seed pendulous.

ANALYSIS OF THE SUB-DIVISIONS OF THE RUBI.

* *Shrubby, with the barren stem*	
† *arched and rooting at the extremity.*	
Cæsious; pruinose, but not hoary, with unequal prickles, and variable setæ often denuded.	i. R. CÆSII.
Glandulose; covered with numerous aciculi and setæ.	ii. R. GLANDULOSI.
Villous; generally closely hairy, the aciculi, if any, hidden in the pubescence. . .	iii. R. VILLOSI.
Pilose; sparingly clothed with spreading hairs.	iv. R. PILOSI.
Hoary and glaucous; leaves hoary-white beneath.	v. R. CANDICANTI.
Smooth and polished: always quite smooth.	vi. R. NITIDI.
† *Erect, or sub-erect, not rooting.*	
Sub-erect; with 5-nate or 7-nate leaves. .	vii. R. SUB-ERECTI.
Erect; mostly with pinnate leaves, always white beneath.	viii. R. IDÆI.
* *Herbaceous.*	SP. 39, 40, 41.

A. *Fruticose. Biennial or Sub-perennial.*

a. *Stem arched, and rooting at the extremity. Sub-perennial.*

Sub-div. i.—RUBI CÆSII. *Barren stem pruinose, with unequal prickles, generally with few setæ, prostrate unless supported.*

1. R. *cæ'sius.* S. 6-10. (W.) 16. Stem glaucous, round; prickles slender, unequal; leaves mostly ternate, flexible, naked, central leafl. narrowed at base; panicle simple, glandular; fruit glaucous; sep. inflexed.—Thickets, ditches.
   - β. *rugósus.* stouter, more prickly; panicle compound.
   - γ. *híspidus.* panicle and cal. excessively glandular.
   - δ. *nudátus.* setæ and glands 0; leaves often 5-nate, pubescent beneath.
   - ε. *ténuis.* stem smooth; prickles strong; panicle slender and prickly; fruit black.
2. R. *dumetórum.* S. 6-8. (W. v.—P.) 16. Stem angular, setose; prickles many, very unequal; leaves 5-nate, coriaceous, downy beneath; central leafl. cordate-cuspidate; panicle branched, leafy, prickly, more or less setose; cal. involute on fruit.—Hedges, thickets.
   - α. *glabrátus.* stem prickly, smooth; panicle with few setæ.
   - β. *pilósus.* stem and panicle tomentose; leaves hairy beneath.
   - γ. *bífrons.* stem sub-glabrous; prickles long; panicle and cal. downy; leaves hoary beneath.
   - δ. *férox.* stem horrid with prickles and setæ; leaves large; panicle very setose.
3. R. *Wahlbérgii.* S. 6-8. (P.) ? Stem obtusely angular, with few hairs and setæ, but many unequal prickles; leafl. broadly ovate acuminate; panicle long, setose, and prickly; floral leaves broad at base; sep. patent in fruit.—Thickets.
4. R. *sublústris.* S. 6-8. (W. v.—P.) 10. Stem angular, smooth, (rarely with setæ); prickles small, distant, straight; leaves 5-nate, smooth above, green, with soft pubescence beneath, central leafl. coryliform, last pair sessile, overlapping; panicle corymbose, downy, leafy below; cal. reflex.—Hedges.
   - β. *Sálteri.* stem downy or hairy; leafl. oval, hairy on both sides; panicle much branched.
   - γ. *cœnósus.* stem and panicle very white with close down.
   - δ. *grandifólius.* leaves very large and broad; central leafl. lobed.

Sub-div. ii.—RUBI GLANDULOSI. *Barren stem arching or procumbent, hairy, more or less covered with aciculi and setæ.*

* Stem with 3-nate or pedate, rarely 5-nate (as 7 β) leaves.

5. R. *Schleícheri.* S. 6-8. (P.) 14. Stem angular, sparingly setose; prickles slender, unequal; leaves opaque, the ribs hairy beneath; lowest pair of leafl. sessile; central one cordate acuminate, coarsely serrate; panicle with distant, leafy branches, hairy, setose, crowded at the summit; cal. patent.—Hedges and thickets.

6. R. *Güntheri.* S. 7-9. (P.) E.-4. Stem prostrate, angular, with scattered hairs, numerous short setæ, and unequal weak prickles; leaves smooth above, pilose beneath, central leafl. obovate, acuminate; panicle very narrow, flexuous, sub-racemose, hairy and glandular, with few weak prickles; pet. narrow, inflexed.—Shady woods.

7. R. *Bellárdi.* S. 7, 8. (W. *v.* P.) 5. Stem procumbent, roundish, closely hairy and setose; prickles very small, numerous, weak; leaves with pale, prominent, ciliated ribs beneath; central leafl. ovate cuspidate, finely serrate; panicle closely hairy, densely but minutely glandular, crowded at the summit; sep. patent; fl's involute.—Marshy woods.

β. *Lejeúnii.* stem minutely setose, with longer prickles mixed with the small ones; leaves 4 and 5-nate; central leafl. obovate lanceolate; panicle much branched, leafy, crowded with unequal setæ and aciculi.

γ. *rosáceus.* prickles on the stem stronger and more unequal; petioles densely prickly; leaves coarsely serrate; panicle widely branched, with many prickles, hairs, and long setæ; sep. lengthened.

8. R. *hírtus.* S. 7-11. (P. *v.* R.) 6. Stem procumbent, covered with rigid hairs, setæ and unequal prickles; leaves coriaceous, hairy beneath; central leafl. roundish ovate; panicle long, branched, leafy, covered with purple setæ, glands, and rigid hairs; cal. shaggy, patent.—Upland woods.

β. *Mœ'nchii.* leaves smaller; central leafl. ovate-lanceolate; panicle less crowded, hairy.

γ. *monstrífícus.* excessively hirsute; cal. horrent; leaves jagged.

9. R. *humifúsus.* S. 7, 8. (P.) S.-1. Stem procumbent, round, hairy, and setose; prickles numerous, very slender and unequal, passing into setæ; leaves finely serrate, pale and hairy below; panicle branched, lower branches elongated, leafy; upper 1-fl'd, with weak hairs, setæ, and long prickles.—Glen Falloch, Perthshire.

* Barren stem mostly with 5-nate leaves.

† Prickles unequal, passing into setæ.

10. R. *fuscus.* S. 7-9. (P.) 6. Stem angular, hairy, with few setæ, and weak declining prickles; leaves large, coarsely and irregularly serrate, green, and velvety beneath; central leafl. cordate-ovate, acuminate; panicle long, straggling, corymbose, often leafy to the summit, densely hairy and setose, with slender prickles interspersed.—Hilly woods.

11. R. *Bloxámii.* S. 7-9. E.-1. Stem sulcate, with scattered hairs and numerous setæ passing into aciculi; prickles slender, declining; leaves soft, hairy, green on both sides, the lowest pair of leafl. supported by the intermediate, central leafl. ovate-rotund., cuspidate, inciso-dentate; rachis very hairy and setose; panicle widely branched, paniculate, with large, ternate, floral leaves below, bracteated only but crowded at the summit; ped. armed with numerous prickles.—Leicestershire.

12. R. *fusco-áter.* *S.* 7, 8. (—P.) 8. Stem decumbent, with scattered hairs, setæ, and unequal straight prickles; leaves opaque, pale with soft pubescence beneath; central leafl. cordate-ovate, wavy, acuminate; panicle often rather short, leafy, with short hairs, longer setæ, and long, declining prickles.—Woods, thickets.

13. R. *Kœhleri.* *S.* 7, 8. (P.) 10. Stem horrent, with innumerable, unequal, straight prickles, and setæ passing into aciculi; leaves 5-nate, opaque, coriaceous, closely hairy, but green beneath; central leafl. obovate acuminate, sharply serrate; panicle long, prickly, and setose, narrow, with short, distant, corymbose branches.—Thickets.

β. *cuspidátus.* prickles shorter; central leafl. obovate cuspidate; panicle with fewer prickles.

γ. *echinátus.* stem more prickly and setose; leafl. broader; panicle wider, with longer branches, hairs, and setæ.

δ. *inféstus.* stem with short, very strong prickles, and short aciculi; panicle almost simple.

14. R. *pállidus.* *S.* 7, 8. (+P.) 8. Stem sulcate, hairy, with many unequal setæ, and weak, deflexed prickles; leaves hairy, pale beneath, often large; central leafl. obovate elliptical, acuminate, sharply serrate; panicle broad, hairy, and setose, with long, pale prickles, and distant corymbose, leafy branches.—Woods.

β. *foliósus.* panicle very long, excessively hairy, with long setæ, and pale prickles; lower branches corymbose, leafy; upper with long foliaceous bracts.

15. R. *thyrsiflórus.* *S.* 8. (P.) E.-1. Stem angular, sulcate, with small, unequal prickles, and many equal setæ; leaves green on both sides, hairy, coarsely serrate; panicle very long, the lower branches paniculate, upper ones numerous, extra-foliaceous, close, hairy and glandular, many-fl'd.—Devonshire.

† Prickles nearly equal, with small setæ and aciculi.

16. R. *rudis.* *S.* 7, 8. (+P.) 10. Stem angular, sulcate, hispid with the short setæ, prickles extending beyond them; leaves nearly smooth above, grey with pubescence beneath, sharply doubly serrate; panicle long, hairy, leafy, densely glandular, with few pale prickles, its short branches crowded at the summit.—Thickets.

α. *vérus.* central leafl. obovate-lanceolate.

β. *Leightoni.* leaves thin; central leafl. roundish ovate, suddenly cuspidate.

γ. *Reichenbáchii.* stem hairy, with few setæ and aciculi; central leafl. subrotund.

δ. *attenuátus.* central leafl. obovate, with a very long cusp, pale, green beneath.

17. R. *Hýstrix.* *S.* 7-10. (P.) 12. Stem angular, sulcate, hairy, with unequal setæ; prickles very numerous; leaves jagged, closely hairy beneath; central leafl. elliptical, narrow at base; panicle long, leafy, prickly; setæ extending beyond the hairs; upper branches short and crowded; sep. setose, elongated.—Thickets.

β. rádula. stem less hairy, more setose; leaves white beneath; central leafl. ovate acuminate.

γ. pygmæ'us. stem round, more hairy, setose, and prickly; petioles very setose; leaves hairy on both sides.

18. R. *lingua.* *S.* 7, 8. (P.) 2. Stem slightly hairy; setæ few, inconspicuous; prickles few, distant; leaves large; leafl. rotundo-ovate, abruptly cuspidate, thin and green on both sides, nearly smooth; panicle widely spreading, leafy below, the upper flowers on long, hairy, setose ped. armed with very long, weak prickles.—Woods.

Sub-div. iii.—RUBI VILLOSI. *Stem angular, arching, closely hairy, with occasional setæ. Rachis very hairy.*

19. R. *Babingtónii.* *S.* 7-10. (W.) E.-? Stem rounded, sulcate, hispid with short hairs, setæ, and aciculi, (afterwards denuded); prickles short, declining, irregularly scattered; leaves 3-nate, or 5-nate, very large, green on both sides, almost smooth, mucronate-dentate, central leafl. obovate, sharply cuspidate; panicle very long, hairy, prickly, the lower branches paniculate, upper crowded, compound, ped. closely prickly; floral leaves large.—Shady thickets.

20. R. *sylváticus.* *S.* 7-10. (W. *v.* P.) 6. Stem angular, hispid, with short, close, parallel hairs; prickles short, deflexed, sharp, slightly unequal; leaves 5-nate, large, smooth above, green and soft with pubescence beneath; leafl. all stalked; central leafl. cordate, coarsely serrate, with a long cusp; panicle long, pubescent, with numerous, alternate, corymbose branches, the greater part with bracts only.—Dense thickets.

β. villicaúlis. stem with stouter prickles; leafl. rounder, cuspidate; panicle with longer, more compound branches.

21. R. *véstitus.* *S.* 7-10. (—P. *v.* + P.) 16. Stem angular, covered with fascicled hairs; prickles strong, hairy, numerous, sometimes with smaller ones, or setæ; leaves 5-nate, coriaceous, with hairy, very prickly petioles, smooth above, white with pubescence beneath; central leafl. roundish-cordate, cuspidate; panicle long, densely hairy; lower branches leafy, corymbose, upper crowded; ped. and cal. white with pubescence.—Woods and thickets.

β. diversifólius. stem with scattered hairs, or denuded; leaves thick, clothy, the whole plant coarse and rough.

γ. argenteus. stem densely downy, silvery, with large prickles; leaves silvery below; panicle very long, with straggling branches.

δ. semirásus. stem nearly smooth; leaves green and smooth on both sides; central leafl. cordate, apiculate-dentate; panicle leafy.

ε. villósus. excessively tomentose and woolly.

22. *leucóstachys.* *S.* 7-9. (W.) 12. Stem angular, sulcate, with unequal, close, and scattered hairs; prickles equal; leaves 5-nate, densely prickly at the origin of the leafl.; central leafl. ovate, gradually acuminate, jaggedly serrate, plicate at the edges; panicle

long, thorny, tawny, with unequal hairs, branches spreading; floral leaves incised, narrowing upwards to the entangled summit; cal. shaggy, more or less prickly.—Hedges, thickets.

β. *sericátus.* stem very hairy, leaves densely downy beneath; panicle narrow, its very short branches flossy, with concealed setæ.

23. R. *Leightoniánus.* S. 7-9. E.-? Stem sub-angular, hairy; prickles somewhat unequal, declining; leaves 3 or 5-nate, doubly dentate apiculate, pilose above, hairy and pale beneath; central leafl. nearly round, the others acute; panicle densely hairy, concealing setæ, leafy below, upper branches short, few-fl'd.—Shropshire.

Sub-div. iv. RUBI PILOSI. *Stem arching, angular, with equal prickles, sparingly clothed with spreading hairs.*

24. R. *carpinifólius.* S. 7-9. (P.) 8. Stem angular, with scattered hairs; prickles deflexed, yellowish; leaves 5-nate, hairy above, glaucous-green, and pubescent beneath, central leafl. obcordate, or obtusely wedge-shaped, with a long cusp, acutely serrate; panicle narrow, white with hairs concealing glands, its branches ascending, close at the summit.—Thickets.

25. R. *Sprengélii.* S. 7-9. (+R. *v.* W.) 6. Stem round or angular, prostrate, alternately branched, clothed with long hairs, and armed with very small, hooked prickles; leaves mostly 3-nate, thin, smooth above and beneath; central leafl. obovate, cuspidate, sharply serrate; panicle slender, with crowded, divaricated, densely tomentose and frizzled branches; pet. small, obtuse, rugose.—Thick woods.

β. *Bórreri.* stem stouter, with larger prickles, and a few setæ; leaves 5-nate; panicle corymbose, prickly, leafy to the summit.

26. R. *amplificátus.* S. 7, 8. (W.) 10. Stem decumbent, very long, with scattered hairs, and few deflexed prickles; leaves 5-nate, the leafl. elliptical-acuminate, almost smooth above, pale, green, and pubescent beneath, central leafl. cuneate, with a long, curved cusp; panicle long, narrow, leafy below, branches short, ascending, and few-fl'd above.—Woods.

27. R. *macrophýllus.* S. 8, 9. (W. *v.* P.) E. I.-5. Stem deeply striated, pithy, almost smooth; the prickles few and small; leaves 5-nate, their leafl. large, elliptical, irregularly dilated, coarsely serrate, green on both sides, and ciliated on the ribs below: central leafl. ovate-acuminate; rachis downy; panicle almost unarmed; branches numerous, corymbose, leafy below, above crowded, densely hairy, with many-fl's.—Shady glens.

Sub-div. v. RUBI CANDICANTI. *Stem sulcate, angular, glaucous-hoary when young, with equal prickles.*

28. R. *fruticósus.* S. 7, 8. (P. *v.* W.) 18. Stem glaucous, with minute pubescence; prickles often very falcate, numerous; leaves 5-nate, smooth above, hoary-white beneath, coriaceous; central leafl. ovate-

oblong, acute; panicle long, narrow, compound, hoary, with patent, almost leafless branches.—Hedges and thickets.

β. *discólor.* branches of the panicle fewer, more distant, less crowded; ped. white, with down, the leaves still whiter beneath.

γ. *thyrsoidéus.* prickles almost straight, the branches of the panicle with numerous fl's, each on a long, slender ped.

δ. *macroacánthus.* leafl. broader, with long cusps; panicle tomentose and prickly, with ascending branches.

ε. *geminátus.* branches of the panicle and fl's excessively multiplied, almost unarmed.

29. R. *argénteus.* *S.* 7, 8. (W.) 5. Stem almost smooth, polished, sulcate, with declining prickles; leaves 5-nate; leafl. all elliptical, acuminate, sharply serrate, smooth above, silvery beneath; panicle hairy, leafy, with acutely ascending branches, crowded at the summit.—Thickets.

Sub-div. vi. RUBI NITIDI. *Stem arched, angular, sulcate, quite smooth. Prickles nearly equal. Sepals constantly reflex.*

30. R. *cordifólius.* *S.* 7-10. (W.) 12. Stem deeply sulcate, smooth, with distant, deflexed prickles; leaves 5-nate, coriaceous, smooth above, greyish green beneath; leafl. all stalked, central one cordate, cuspidate; panicle chiefly extra-foliaceous, closely downy, the upper branches cymose, spreading, closely crowded.—Woods and thickets.

β. *blánditus.* very luxuriant, with lengthened panicles, and large floral leaves.

γ. *maciléntus.* growing in a fastigiate manner, with small leaves, and short panicles.

31. R. *affi'nis.* *S.* 7-10. (—P.) ? Stem angular, with numerous straight, or declining prickles; leaves 5-nate, smooth and polished above, greyish green, with pubescence beneath; lower leaflets stalked, incumbent on the petiole, central leafl. obovate, inciso-dentate, with a long cusp; panicle broad, compound, the lower branches widely spreading.—Woods.

32. R. *nitidus.* *S.* 7, 8. (—P.) E.-4. Stem assurgent, smooth, and polished; prickles few, declining; leaves 5-nate; leafl. all stalked, deeply cut, hairy on both sides, central leafl. ovate-acuminate; rachis and panicle hairy, with many long, hairy, spreading, corymbose branches, leafy to the crowded summit.—Thickets.

b. *Erect, or sub-erect, not rooting, biennial.*

Sub.-div. vii. RUBI SUB-ERECTI. *Sub-erect, with 5-nate, or 7-nate leaves.*

33. R. *suberéctus.* *S.* 6-8. (W. *v.* P.) 10. Stem angular, smooth; prickles distant, straight; leaves 5-nate, or 7-nate, flexible, with prominent veins beneath, central leafl. cordate-ovate, acuminate, narrowed at the base; panicle almost simple, slightly hairy, broad at the base, the upper fl's on long ped.; sep. patent on the half-ripe fruit.—Moist woods. Boggy heaths.

β. *fastigiátus.* stem declining; fl's in simple, alternate, leafy corymbs.
γ. *fi'ssus.* prickles numerous, slender; leaves rather glaucous beneath, central leafl. divided.
δ. *trifoliátus.* stem polished; prickles few; leaves 3-nate; panicle elongate.
ε. *attenuátus.* very slender, trailing; fl's and fruit small.

34. R. *umbrósus.* S. 8. (W.) E.-1. Stem much branched, firm, angular, sulcate, polished; prickles exceedingly small; leaves 5-nate, large, the lowest pair of leafl. petiolated, central one cordate-acuminate, dentate-serrate, point very long; panicle simple, almost unarmed, ped. 1-fl'd, with large, cordate, floral leaves overtopping the summit.—Deep woods, Devonshire.

35. R. *plicátus.* S. 7, 8. (P. *v.* W.) 10. Stem angular, smooth, with many deflexed prickles; leaves 5-nate, the lowest pair of leafl. sub-sessile, pilose beneath, central one cordate-cuspidate, plicate, the petiole prickly; panicle racemose, prickly, leafy below, the lower leafl. dilated at base; ped. many-fl'd, closely hairy.—Damp thickets.

β. *carinátus.* prickles hooked; leafl. elliptic-lanceolate, acutely carinate at the base and summit.

36. R. *lentiginósus.* S. 7, 8. (P.) 1. Stem furrowed, covered on all sides with rigid, equal prickles, and red, sessile glands; leaves 5-nate, smooth above, slightly hairy beneath; lowest pair of leafl. sessile, all plicate and inciso-serrate, central leafl. ovate-elliptical, acuminate; panicle almost simple, prickly, leafy below; ped. and cal. tomentose, and minutely glandular.—Mountains. Moel Siabod, Wales.

Sub-div. viii. RUBI IDÆI. *Erect, most commonly with pinnate leaves.*

37. R. *Idæus.* S. 5, 6. (W.) 20. Stem round, pruinose, covered with minute prickles; leaves pinnate, with 5 or 3 ovate leafl., white and plaited beneath; fl's in axillary corymbs, drooping.—Woods.

β. *aspérrimus.* stem rough, with tawny, setaceous prickles; ped. very prickly.
γ. *microphýllus.* leaves trifoliate, very small.

38. R. *Leésii.* S. E.-? Stem tomentose, bending; prickles purple, few, very small; leaves all 3-nate, the leafl. roundish-ovate, almost sessile, the side ones lapping over the terminal one, very white and soft beneath; fl's and fruit unknown.—Near Brendon, Devonshire.

B. *Stem herbaceous.*

39. R. *saxátilis.* P. 7, 8. (—G.) 9. Stem slender, prostrate, creeping, rooting, unarmed, or with a few aciculi, flowering branches erect; leaves 3-nate; leafl. obovate, deeply cut; fl's in terminal corymbs; pet. small, oval, pointed, erect.—Stony ground.

40. R. *arcticus.* P. 5. (—R.) S.-1. Stem erect, unarmed; leaves 3-nate; fl's solitary; pet. roundish, notched, much longer than cal.—Scottish mountains.

41. R. *Chamæmórus.* Stem simple, erect, unarmed; leaves simple, lobed, and
P. 6. (R.) 7. plaited; fl's terminal, solitary.—Peaty moors.

13. SIBBA'LDIA. *L.*

Cal. concave in 10, alternately large and small, segments. Pet. 5. Stam. 5. Fruit of 5 or 10 small akenia, placed on a dry receptacle.

1. S. *procúmbens.* Leaves ternate, leafl. wedge-shaped, with 3 teeth at end;
P. 7. (Y.) S.-1. fl's corymbose. Pet. lanceolate.—Mountains.

13. GE'UM. *L.* Avens.

Cal. 10-cleft, the outer alternate segments minute. Pet. 5. Stam. numerous. Fruit of several akenia, tipped with the long, persistent jointed styles which are hooked at the joint, placed on a dry receptacle.

1. G. *urbánum.* Fl's mostly erect; carpophore 0; root-leaves interruptedly
P. 7-8. (Y.) 20. pinnate and lyrate, those of stem 3-nate; stip. large, round; pet. obovate; cal. of fruit reflexed.—Thickets.
β. *intermédium.* pet. roundish, with a wedge-shaped claw; cal. of fruit patent.
2. G. *rivále.* Fl's nodding; carpophore elongated; leaves as last; stip.
P. 6, 7. (p. Br.) 17. small, ovate, toothed; pet. obcordate; cal. of fruit erect.—Damp woods.
β. *hýbridum.* fl's ½-double; sep. transformed into leaves.

15. POTENTI'LLA. *L.*

Cal. concave, 8-10-parted, segments alternately smaller. Pet. 4-5. Stam. numerous Fruit of numerous, minute akenia, placed upon a flattish, dry receptacle.

* Leaves pinnate, especially the lower.
† Pet. obtuse, larger than sepals.
1. P. *fruticósa.* Stem erect, shrubby; leaves of mostly 5, equal, oblong,
P. 6. (Y.) E. I.-3. acute, entire, hairy leafl., with revolute margins.—Yorkshire. Galway. Clare.
2. P. *rupéstris.* Stem erect, herbaceous; lower leaves of 5-7 equal, roundish-
P. 5, 6. (W.) E.-1. ovate, cut and serrate leafl., with flat margins, upper leaves 3-nate.—Craig Bredin, Montgomeryshire.
3. P. *anserína.* Stem creeping; leaves of numerous, unequal, oblong,
P. 6, 7. (Y.) 20. acutely serrate leafl., silky and white beneath.—Roadsides.
β. *sericea.* leaves white and silky on both sides.
† Pet. acuminate, smaller than sepals.
4. P. *Cómarum.* Stem ascending, branched; leaves of 5-7 elliptic-oblong,
P. 7. (+P.) 15. sessile, acute, sharply serrate leafl.; receptacle at length enlarged, spongy.—Marshes.
* Leaves digitate, 5-7-nate, especially the lower.
† Petals 4; stem-leaves 3-nate, sessile, or shortly stalked.
5. P. *Tormentilla.* Lower leaves 5-nate, on long stalks; stip. cut.—Dry
P. 6-8. (Y.) 20. places.
β. *nemorális.* leaves all shortly stalked; stip. mostly entire.

† Petals 5.

‡ Leaves 5-nate; leafl. obovate-cuneate.

6. P. *argéntea.* P. 6, 7. (Y.) 13. — Stem decumbent, or ascending; leafl. white and downy beneath, inciso-serrate, with revolute margins. — Dry places.

7. P. *vérna.* P. 4, 5. (Y.) E. S.-8. — Stem prostrate; leaves sometimes 7-nate, leafl. with 2-4 teeth on each side towards the end, bristly on margins and ribs; lower stip. linear.—Dry pastures.

β. *alpéstris.* — stem ascending; leafl. somewhat hairy; stip. all ovate.

8. P. *réptans.* — Stem creeping and rooting; leaves all 5-nate, serrated throughout, rough on ribs and margins.—Banks.

β. *seríceа.* — leaves and cal. with silky hairs on both sides.

γ. *acutijólia.* — leaves silky as β, lanceolate, deeply toothed.

‡ Lower leaves of 7 linear-cuneate leaflets, deeply serrated throughout,

9. P. *opáca.* P. 6. (Y.) S.-1. — green above and below, those of stem 3-nate; teeth more than 5 on each side of leafl.—Clova. Balquiddar.

* Leaves 3-nate.

10. P. *tridentáta.* P. 5, 6. (W.) S.-1. — Leafl. oblong-cuneate, 3-toothed at end, glabrous above, hairy beneath; pet. oval.—Werron-hill, Clova.

11. P. *Fragariástrum.* P. 3, 4. (W.) 20. — Leafl. roundish-obovate, serrate, silky above and below; pet. obcordate.—Hedge-banks.

16. FRAGA'RIA. *L.* Strawberry.

Cal. concave, 10-cleft, segments alternately smaller. Pet. 5. Stam. numerous. Fruit of numerous, minute akenia, placed upon a large, succulent, dissolving receptacle.

1. F. *Elátior.** P. 6-9. (W.) 6. — Hairs on ped. and pedicels spreading, and somewhat deflexed; cal. spreading or reflexed in fruit.—Woods.

2. F. *vésca.* P. 5-7. (W.) 20. — Hairs of ped. widely spreading, of the pedicels appressed, silky; cal. spreading or reflexed in fruit.—Woods.

Tr. VI. *SPIRÆIDÆ. Fruit of numerous follicles, with from* 1-6 *seeds suspended from the inner suture. Cal. persistent.*

17. SPIRÆ'A. *L.* Meadowsweet. Dropwort.

Cal. 5-cleft, persistent, not enclosing the carpels. Pet. 5. Follicles 3-10, 2-6-seeded.

1. S. *Filipéndula.* P. 7. (—Y.) 15. I.-1. — Herbs; stip. of lowest leaves linear, acute, entire, of stem rounded and cut; leaves unequally pinnate, leafl. all oblong, deeply cut and serrated; fl. cymose.—Dry, chalky pastures.

2. S. *Ulmária.* P. 7. (—Y.) 20. — Herbs; stip. all rounded, toothed; leaves unequally pinnate, leafl. ovate, undivided, the terminal one larger, 3-lobed; fl's cymose.—Meadows.

3. S. *salicijólia.** P. 7. (R.) E. S.-7. — Shrubby; stip. 0; leaves elliptic-lanceolate, serrated, glabrous; racemes terminal, compound.—Moist woods.

ORDER XX.—CICEREÆ OR LEGUMINOSÆ.

Mostly herbs or shrubs, having alternate stipuled, rarely simple leaves, with various important properties, none of which in native plants are poisonous. Cal. 5-cleft, the odd segment anterior. *Cor. generally papilionaceous*, the odd pet. posterior. Stam. mostly 10; fil. mon. or diadelphous. *Ov. simple, superior; placentæ sutural.* Style and stigma simple. *Fruit a* 1 or many-seeded, often curved or spiral *legume. Embr. without alb.*; rad. bent on edges of cot., or straight.

- * Pod of 1 or more, 1-seeded joints. Leaves neither ternate, nor with tendrils.
  - † Pod of but 1 joint, the upper entire, straight, the lower thin, curved, and toothed. Fl. umbellate. . } 1. ONOBRYCHIS.
  - † Pod of several joints. Fl's racemose.
    - ‡ Pod cylindrical, slightly narrowed at joints. . 2. ARTHROLOBIUM.
    - ‡ Pod compressed and
      - notched equally in both sutures. Heads of fl's with a pinnate leaf under each. . . } 3. ORNITHOPUS.
      - Pod sinuated deeply in upper suture only. Fl's without a pinnate leaf. . . . } 4. HIPPOCREPIS.
- * Pod continuous, not in joints.
  - † Petiole ending in a tendril or an herbaceous point.
    - ‡ Style filiform, hairy all over, bearded beneath stigma. 5. VICIA.
    - ‡ Style flattened or dilated upwards.
      - Petiole tendrilled, or expanded into a single, linear leaf, without leafl. . . . . } 6. LATHYRUS.
      - Petiole ending in an herbaceous point; tendrils 0. 7. OROBUS.
  - † Petiole ending in a leafl. or a bristly point, never in a tendril.
    - ‡ Pod imperfectly 2-celled by the inflexion of the
      - lower suture. Leaves 3-nate, or simple. . . 8. ASTRAGALUS.
      - upper suture. Leaves pinnate. . . 9. OXYTROPIS.
    - ‡ Pod 1-celled, sutures not inflexed.
      - § Cal. 2-leaved, with 2 lateral bracts at base. . 10. ULEX.
      - § Cal. 5-toothed, or parted, bilabiate.
        - ‖ Style curled up, or hooked,
          - thickened at the end. Stigma capitate. . 11. SAROTHAMNUS.
          - Style subulate. Stigma oblique. . 12. GENISTA.
        - ‖ Style ascending.
          - ¶ Pod 1-4 seeded, dehiscent, never reniform.
            - Fil. monadelphous. Leaves seldom 3-nate.
              - Cal. inflated, 5-toothed. . . 13. ANTHYLLIS.
              - Cal. campanulate, deeply 5-cleft. . 14. ONONIS.
            - Fil. diadelphous, 9 united, 1 separate.
              - Fl's in 1-sided racemes. . . 15. MELILOTUS.
              - Fl's in dense heads or spikes. . 16. TRIFOLIUM.
          - ¶ Pod usually more than 4-seeded, if 1-seeded it is then indehiscent and reniform.
            - Pod straight.
              - Pod falcate or spiral. . . . 18. MEDICAGO.
              - Fl's minute, reddish. . . 17. TRIGONELLA.
              - Fl's not small, yellow. . . 19. LOTUS.

Tr. I. *HEDYSARIDÆ. Pod divided transversely into* 1-*seeded joints, usually separating and indehiscent.*

ONO'BRYCHIS. *Tourn.* Saintfoin.

Cal. nearly equally 5-toothed. Keel obliquely truncate, longer than wings. Stam. diadelphous. Pod 1-celled, indehiscent, 1-seeded, upper suture straight, lower curved, thinner.

1. O. *sativa.* Leaves about 12½-pinnate, nearly smooth; wings shorter
P. 6, 7. (R.) E. S.-11. than cal.; keel as long as standard.—Chalk-hills.

2. ARTHROLO'BIUM. *Desv.*

Cal. tubular, nearly equally 5-toothed. Keel obtuse, very small. Pod cylindrical, curved, scarcely narrowed at the articulations.

1. A. *ebracteátum.* Stem filiform; leaves with many pairs of elliptic-oblong
P. 7, 8. (Y.) E.-1. leafl., the lowest pair remote from stem; ped. as long as leaves, 2-4 fl'd.—Scilly Islands.

3. ORNI'THOPUS. *L.* Bird's-foot.

Cal. tubular, nearly equally 5-toothed. Keel obtuse. Pod elongated, compressed, curved, contracted equally on both sides at the articulations.

1. O. *perpusillus.* Leaves pinnate, with 5½-9½ pairs of leafl.; fl's capitate,
A. 5-7. (W. ‖ R.) 18. bracteated; legumes curved upwards.—Gravelly places.

4. HIPPOCRE'PIS. *L.* Horse-shoe Vetch.

Cal. short, with 5 acute lobes. Style filiform, acute. Pod compressed, each of the numerous joints crescent-shaped.

1. H. *comósa.* Ped. longer than the 6½ to 12½-pinnate leaves; pods 5-8,
P. 5-8. (Y.) E. S.-9. umbellate, scabrous.—Dry banks.

Tr. II. *VICIIDÆ. Pod continuous. Cot. in germination remaining under ground. Stam. diadelphous, i. e.* 1 *and* 9. *Leaves mostly cirrhose.*

5. VI'CIA. *L.* Vetch.

Style filiform, with a tuft of hair beneath the stigma, or its upper part hairy all over. Leaves mostly with tendrils.

* [1] Pod 2-seeded, hairy, or glabrous (1 β); cal. teeth equal.
1. V. *hirsúta.* Ped. 2-6-fl'd, as long as leaves; leafl. in 6-8 pairs, linear,
A. 6-8. (—B.) 20. oblong, truncate, mucronate.—Corn fields and hedges.
β. *augustifólia.* ped. 1-2-fl'd.
* [2] Pod 4-seeded, smooth; cal. teeth unequal, the upper shortest.
2. V. *tetraspérma.* Ped. 1-2-fl'd, as long as leaves; leafl. in 4-6 pairs, oblong,
A. 6-8. (—B.) 15. obtuse, mucronate.—Hedges and fields.
3. V. *grácilis.* Ped. 1-4-fl'd, longer than leaves; leafl. in 3-4 pairs, linear,
A. 6-8. (—B.) E. I.-2. acute.—Corn fields and hedges.
* [3] Pod more than 4-seeded.
† [1] Ped. 1-3-fl'd.
‡ Leafl. in 1-3 pairs.
4. V. *lathyroides.* Fl. sessile; tendrils often reduced to herbaceous points;
P. 7, 8. (P.) 11. leafl. obcordate or oblong, mucronate.—Dry, gravelly soil.
5. V. *bithýnica.* Fl. on stalks; tendrils perfect; leafl. varying from linear
P. 7, 8. (P.) E.-3. to elliptic, acute.—Dry and sandy places.

‡ Leafl. in more than 4 pairs.

6. V. *lutea.* Leafl. elliptic-lanceolate, pointed; stip. ovate, pointed, brown.—Sea-beach.
P. 7, 8. (Y.) E. S.-2.

7. V. *sativa.* Leafl. elliptic-oblong, often obtuse, truncate, mucronate; stip. ½-sagittate, toothed, with a brownish depression beneath; fl. often in pairs.—Cultivated ground.
A. 5, 6. (P.) 20.

β. *angustifólia.* upper leaves with linear-lanceolate, lower with obcordate, mucronate leafl.; stip. with a black depression beneath.

γ. *Bobártii.* upper leaves with linear truncate leafl.; stip. with a pale depression beneath.

† [2] Ped. 4-fl'd, short.

8. V. *Sépium.* Leafl. in 4-8 pairs; ovate, obtuse, mucronate, hairy; diminishing upwards on petiole; stip. roundish, pointed.—Hedges.
P. 5, 6. (P.) 20.

† [3] Ped. more than 4-fl'd, long.

9. V. *sylvática.* Leafl. in 6-8 pairs, elliptical, mucronate, smooth; stip. somewhat lunate, frequently and deeply toothed at lower part.—Woods.
P. 7. (y. & B.) 16.

10. V. *crácca.* Leafl. in 8-10 pairs, lanceolate, not mucronate, downy; stip. ½-sagittate, entire.—Hedges.
P. 7, 8. (B.) 20.

6. LA'THYRUS. *L.* Vetchling. Everlasting Pea.

Style dilated upwards, naked on the upper side, hairy beneath the stigma. Leaves mostly with tendrils.

* [1] Petioles destitute of true leafl.,

1. L. *A'phaca.* but ending in tendrils, with 2 large stipules at base; ped. 1-fl'd; bracts minute; (2 leafl. are rarely present.)—Sandy fields.
A. 5, 6. (Y.) E.-5.

2. L. *Nissólia.* not forming tendrils, but expanded into linear-lanceolate, straight-ribbed leaves; ped. 1-2-fl'd, without a bract.—Hedges.
A. 5-8. (P.) E.-8.

* [2] Petioles furnished with 1 pair of leafl.

† Stem winged.

‡ Ped. 2-flowered.

3. L. *hirsútus.* Leafl. linear-lanceolate; stip. narrow, ½-sagittate; pods hairy; seeds globose, tubercular.—Fields.
A. 7. (—B. & R.) E.-3.

‡ Ped. many-flowered; pod. reticulated.

4. L. *sylvéstris.* Leafl. 3-ribbed, lanceolate; stip. ½-hastate, narrow; seeds compressed, smooth.—Moist thickets.
P. 7-9. (Y. & P.) E. S.-12.

5. L. *latifólius.** Leafl. many-ribbed, elliptical, pointed; stip. ½-sagittate, triangular, ovate, broad; Seeds tubercular, rugose.—Woods.
P. 7, 8. (R.) E. S.-1.

† Stem not winged, angular; pod obliquely veined.

6. L. *pratensis.* Ped. many fl'd; stip. sagittate, amplexicaul; leafl. lanceolate, silky; seeds globose, smooth.—Moist pastures.
P. 7, 8. (Y.) 20.

* [3] Petioles furnished with 2 or more pairs of leafl; ped. many-flowered.

7. L. *palústris.* Stem winged; leafl. in 2-3 pairs, linear-lanceolate, acute; stip. ½-sagittate, lanceolate.—Moist meadows.
P. 7, 8. (—P.) 4.

8. L. *maritimus.* Stem angular; leafl. in 3-8 pairs, oval; stip. large, oval, cordate, hastate.—Sea-beach.
P. 7, 8. (P.) 1.

β. *acutifólius.* leafl. elliptic-lanceolate.—Unst, Shetland.

7. O'ROBUS. *L.* Bitter-vetch.

Style linear or dilated upwards, naked on the upper side, hairy beneath the stigma. Leaves with herbaceous points in place of tendrils.

1. O. *tuberósus.* *P.* 6, 7. (P.)	18.	Stem winged, simple; leafl. in 2-4 pairs, elliptical, mucronate; stip. ½-arrow-shaped, broad.—Mountain woods.
β. tenuifólius.		leafl. linear-lanceolate.
2, O. *níger.* *P.* 6, 7. (P.)	18.	Stem angular, branched; leafl. in 3-6 pairs, oblong-lanceolate, rounded, apiculate; stip. linear-awl-shaped.—Woods.

Tr. III. *LOTIDÆ. Pod continuous. Cot. in germination rising above the ground, and becoming green leaves. Leaves not cirrhose.*

8. ASTRA'GALUS. *L.* Milk-vetch.

Cal. 5-toothed. Keel obtuse. Pod more or less perfectly longitudinally 2-celled by the inflexed margins of the lower suture.

* Peduncles much shorter thon leaves; pods smooth.

1. A. *glycyphýllos.* *P.* 6. (+Y.)	E. S.-13.	Stip. ovate-lanceolate, free; leafl. ovate in 5-6 pairs, smooth; fl. in ovate spikes; pod. triangular, curved.—Woods and thickets.

* Peduncles not shorter than leaves; pods hairy.

2. A. *hypoglóttis.* *P.* 6, 7. (b. P.)	E. S.-6.	Stip. combined; leafl. in 8-10 pairs, hairy beneath; pods ovate, erect; fl. in large heads.—Gravelly soil.
3. A. *alpinus.* *P.* 6. (W.* P.)	S.-1.	Stip. free; leafl. in 10-12 pairs; pods oblong, pendulous; fl. in capitate spikes.—Glen Dole, Clova.

9. OXY'TROPIS. *De C.*

Cal. 5-toothed. Keel ending in a narrow exserted point. Legume spuriously longitudinally 2-celled by the inflexed margins of the upper suture.

1. O. *uralénsis.* *P.* 7. (P.)	S.-1.	Stem 0; leafl. ovate, acute, silky; pods ovate-oblong, abrupt, with a very oblique, acute point; ped. erect, longer than leaves.—Hilly pastures.
2. O. *campéstris.* *P.* 6. (p. Y.)	S.-1.	Stem short; leafl. lanceolate, somewhat hairy; pods ovate, hairy, with a slightly oblique point; ped. ascending, rather shorter than leaves.—Clova mountains.

10. ULEX. *L.* Furze. Whin. Gorse.

Cal. of 2 leaves, the upper one 2, the lower 3-toothed, with 2 lateral bracts at base. Stam. monadelphous. Pod oval-oblong, turgid, scarcely longer than cal.

1. U. *Europæ'us.* *S.* 5, 6. (Y.)	20.	Cal.-teeth very minute, converging; bracts ovate, lax; fl's lateral; spines strong; branches ascending.—Heaths.
β. stríctus.		fl's rare, terminal; spines slender; branches compact.
2· U. *Nánus.* *S.* 8-11. (Y.)	14.	Cal.-teeth lanceolate, diverging; bracts minute, adpressed; spines slender, terate; branches reclining.—Heaths.
β. májor.		spines strong, deflexed.

11. SAROTHA'MNUS. *Wimm.* Broom.

Cal. 2-lipped, upper lip 2, lower 3-toothed. Stam. monadelphous. Style long, curved, thickened upwards, channelled within. Stigma small, capitate, terminal. Pod. flat.

S. *scopárius.* *S.* 5, 6. (Y.) 20. Leaves ternate or solitary; branches angular, without thorns; fl. axillary, solitary, or in pairs; pod fringed.—Heathy hills.

12. GENI'STA. *L.* Petty-whin. Green-weed.

Cal. 2-lipped, upper lip with 2 deep segments, lower 3-toothed. Standard oblong; keel oblong, straight. Pod flat, compressed, or rather turgid.

1. G. *pilósa.* *S.* 4. (Y.) E.-1. Stip. ovate, blunt; fl. lateral; ped., cal., and underside of leaves silky; spines 0; pods hairy.—Gravelly heaths.
2. G. *tinctória.* *S.* 7, 8. (Y.) 16. Stip. minute, subulate; fl. racemose; cor. and pods glabrous; spines 0; stem not spinous.—Thickets.
   β. *prostráta.* stem and branches procumbent.
3. G. *ánglica.* *S.* 5, 6. (Y.) E. S.-19. Stip. 0; fl. solitary in the axils of the upper leaves; cor. and pods glabrous; stem spinous.—Boggy heaths.

13. ANTHY'LLIS. *L.* Kidney-Vetch.

Cal. tubular, inflated, unequally 5-toothed. Pet. nearly equal in length. Stam. monadelphous. Pod oval, 1-3-seeded, covered by the persistent cal.

1. A. *vulnerária.* *P.* 6-8. (Y.) 19. Heads of fl. in pairs, surrounded with digitate bracts; leafl. unequal.—Dry pastures.
   β. *Dillénii.* fl. red; plant smaller, nearly smooth.

14. ONO'NIS. *L.* Restharrow.

Cal. campanulate; segments 5, linear. Standard large, striated. Stam. monadelphous. Pod. turgid, sessile.

1. O. *arvénsis.* *P.* 6-8. (—R.) 20. Leaves mostly sessile, lower ternate, rest simple; cal. shorter than cor., longer than the 2-3 smooth-seeded pod; stem ascending, hairy, often viscid.—Sandy places.
   β. *spinósa.* stem procumbent, usually spinous; seeds warted.
2. O. *reclináta.* *A.* 7. (—R.) S.-1. Leaves all stalked, ternate; cal. as long as cor., shorter than pod.; seeds 14-16, warted.—Bank near Tarbert, Galloway.

15. MELILO'TUS. *Tourn.* Meliot.

Cal. tubular, nearly equally 5-toothed. Pet. distinct, deciduous; keel obtuse. Stam. diadelphous; fil. filiform. Ov. straight. Pod. 1 or few-seeded, coriaceous, indehiscent, longer than cal.

1. M. *officinális.* *A.* 6, 7. (Y.) 18. Cor. more than twice as long as cal., pet. nearly equal; pods acute, hairy; stip. setaceous.—Waste places.
2. M. *vulgáris.* *B.* 7, 8. (W.) 3. Cor. twice as long as cal., wings and keel shorter than standard; pods obtuse, smooth; stip. subulate.—Sandy places.

16. TRIFO'LIUM. *L.* Trefoil. Clover.

Cal. tubular, mostly unequally 5-toothed. Pet. combined by their claws. Keel obtuse. Stam. diadelphous; fil. slightly thickened upwards. Pod. 1-4-seeded, indehiscent, shorter than the persistent, investing cal.

* Heads of fl. sessile, or on stalks not exceeding them in length; fl. numerous.
† Heads terminal, but rarely in pairs.
‡ Cal. not ½ the length of cor., (except 1 β.) 10-ribbed,
§ its teeth setaceous, the lowest much the longest,

1. T. *praténse.* — all ciliated, the tube hairy; leafl. oval, often with a pale spot, lower emarginate; stip. oval, bristle-pointed.—Pastures.
P. 5, 6. (P. *v.* W.) 20.
β. *parviflórum.* — cal. longer than cor.
2. T. *médium.* — Cal.-teeth hairy, its tube glabrous; leafl. ovate, not spotted, all apiculate; stip. lanceolate.—Pastures.
P. 6-9. (P.) 20.

§ Cal.-teeth lanceolate-subulate, nearly equal.

3. T. *incarnátum.** — Plant villose; stip. ovate, obtuse; leafl. ovate, retuse, or obcordate.—Naturalized.
A. 6, 7. (—P.) E.-1.
β. *Moliniéri.* — fl's yellow; leafl. obcordate.

‡ Cal. more than ½ the length of cor.

4. T. *Bocconi.** — Heads usually in pairs, sessile; cal.-teeth lanceolate, subulate, mucronate, hairy, as long as cor., erect, each 1-ribbed.—Dry places, Cagewith, Cornwall.
A. 7. (—Y.) E.-1.
5. T. *marítimum.* — Heads not in pairs, stalked, ovate, globose; cal. shorter than cor., its teeth at length broad, leafy, acute, spreading, 1-nerved, the lowest 3-nerved; stip. subulate, very long.—Salt marshes.
A. 6, 7. (—R.) 2.
6. T. *arvénse.* — Heads not in pairs, stalked, at length cylindrical; cal. longer than cor., hairy, its teeth setaceous, hairy, nearly equal, nerveless, at length spreading; stip. ovate, acuminate.—Sand-fields.
A. 7-9. (—R.) 19.

† Heads both lateral and terminal on the one stem.
‡ Cal.-teeth hairy, mucronate, cal. 10-ribbed, mostly as long as cor.

7. T. *striátum.* — Tube of cal. slightly inflated when in fruit; the teeth subulate, straight; leafl. obovate.—Sandy fields.
A. 6. (—P.) 14.
β. *eréctum.* — cor. longer than cal; stem erect.
8. T. *scábrum.* — Tube of cal. cylindrical in fruit, the teeth lanceolate, at length patent; leafl. obcordate.—Sandy fields.
A. 5, 6. (W.) 11.

‡ Cal.-teeth smooth, and

9. T. *glomerátum.* — contracted at base, ovate, patent, the tube smooth, 10-ribbed, cal. nearly as long as cor.—Sandy coast.
A. 6. (R.) 3.
10. T. *suffocátum.* — not contracted at base, reflexed; the tube hairy, not ribbed; cal. much longer than cor.—Sandy coast.
A. 6, 7. (—R.) E.-3.

* Heads on stalks longer than ½ their length.
† Fl's more than 12 in the heads.
‡ Invol. multifid.

11. T. *fragiferum.* — Cal. when in fruit inflated, bladdery, deflexed, its 2 upper teeth prominent; seeds 2; stem smooth.—Moist meadows.
P. 6-8. (—P.) 15.
12. T. *ochroleúcum.* — Cal. not inflated; the lowest tooth much the longest; seeds single; stem hairy.—Gravelly soils.
P. 6, 7. (—Y.) E. S.-15.

‡ Invol. 0.

13. T. *stellátum.* *A.* 6, 7. (—Y.) E.-1. — Cal. longer than cor., teeth equal, long, ciliated, spreading after flowering.—Gravelly beach.

14. T. *répens.* *P.* 5-9. (W.) 20. — Cal. shorter than cor.; stem smooth; cal. teeth nearly equal; leafl. all shortly stalked, roundish, often emarginate, with a lunate spot.—Meadows.

15. T. *procúmbens.* *P.* 6, 7. (Y.) 20. — Cal. shorter than cor.; stem hairy; cal. teeth unequal; the middle leafl. on a short stalk, all obovate, emarginate, without a lunate spot.—Dry fields.

† Fl's not more than 12 in the heads.

‡ Stalks as long as heads.

16. T. *subterráneum.* *A.* 6, 7. (W.) 11. — Fl's 2-5; cal. producing numerous stellate bodies, which ultimately fold over the fruit.—Gravelly places.

‡ Stalks much longer than the heads.

17. T. *minus.* *A.* 6, 7. (Y.) 29. — Heads erect; fl's 3-5, lax, ultimately deflexed; standard furrowed, truncate, quite covering pod.—Dry gravelly places.

18. T. *filiförme.* *A.* 6, 7. (Y.) 20. — Heads drooping; fl's about 12, close, and ultimately deflexed; standard even, emarginate, covering pod.—Pastures.

17. TRIGONE'LLA. *Linn.*

Cal. campanulate, 5-cleft. Keel very small; wings and standard similating a tripetalous cor. Pod many-seeded, oblong, compressed or cylindrical, acuminate.

1. T. *ornithopodioides.* *A.* 6, 7. (R.) 5. — Fl's 2-4; stem prostrate; leafl. obcordate denticulate; pod. twice as long as cal.—Waste places.

18. MEDICA'GO. *L.* Medick.

Cal. somewhat cylindrical, 5-cleft. Stam. diadelphous. Pod many-seeded and falcate, or spirally twisted, or rarely 1-seeded and reniform.

* Pods not prickly.

1. M. *lupulina.* *A.* 5-8. (Y.) 20. — Pod reniform, with a spiral point, rugged, 1-seeded; fl's in dense ovate heads; leafl. obovate, denticulate above, mucronate.—Waste ground.

2. M. *falcáta.* *P.* 6, 7. (Y.) E.-3. — Pod falcate, downy, many-seeded; fl's in racemes; pedicels longer than bracts.—Dry banks.

3. M. *sativa.* *P.* 6, 7. (R.) E. S.-7. — Pod in a loose, open spiral, many-seeded; fl. in racemes; pedicels shorter than bracts.—Fields and hedges.

* Pods with 2 rows of divergent, hooked or curved prickles,

† compactly spiral.

4. M. *maculáta.* *A.* 5, 6. (Y.) 9. — Convex edge of pod thick, 4-ridged, with a central furrow; leafl. with a purple spot in centre; stip. toothed; ped. 2-3-fl'd.—Gravelly soil.

5. M. *minima.* *A.* 6, 7. (Y.) E.-2. — Convex edge of pod thin, without a furrow; leafl. not spotted; stip. entire; ped. 1-6-fl'd.—Sandy fields.

β. *canéscens.* — stems and leaves hoary.

† Pod loosely spiral.

8. M. *denticuláta.* *A.* 5-8. (Y.) E. I.-1. — Convex edge of pod thin; leafl. obcordate; stip. lanciniated.—Sandy sea-coast.

β. *apiculáta.* — spines of pod very short, not hooked.

19. LO'TUS. *L.* Bird's-foot-trefoil.

Cal. tubular, 5-cleft. Keel ascending, with a narrow beak; wings connivent at upper margin. Pod cylindrical, somewhat spongy within, and imperfectly divided by transverse partitions.

* Claw of standard obovate, transversely arched.

1. L. *corniculátus.* Cal.-teeth straight in the bud, notch between the upper
P. 7, 8. (Y.) 20. teeth rounded; stem ascending.—Dry banks.
β. *ténuis.* stem filiform, procumbent; leafl. linear.

* Claw of standard linear, or subulate, not transversely arched.

2. L. *májor.* Cal.-teeth stellately spreading in bud, subulate; heads
P. 7, 8. (Y.) 16. 8-12-fl'd; stip. roundish-ovate.—Damp places.
β. *glabriúsculus.* leaves, stip., bracts, and sep., ciliated.
3. L. *augustissimus.* Cal.-teeth straight in bud, subulate; heads 2-fl'd; pod
A. 7, 8. (Y.) E.-1. linear, 6 times longer than cal.—Fields near sea.
β. *hispidus.* pod terate, rugose, twice as long as cal.; heads 3-4 fl'd.

ORDER XXI.—THYMELEÆ.

Shrubs with entire, exstipulate leaves, possessing stimulating and vesicating qualities. *Cal.* inferior, tubular, coloured, the limb 4, rarely 3 or 5-cleft, *imbricated in æstivation*, with a fleshy disk lining the orifice. *Cor.* 0, or scale-like. *Stam.* definite, *inserted on the tube of cal. Anth.* 2-celled, *bursting longitudinally. Ov. of* 1 *carpel; ovule* 1, *pendulous.* Fruit a nut or drupe. *Alb.* 0, or thin and fleshy; embr. straight; rad. superior.

1. DA'PHNE. *L.* Mezereon. Spurge-Laurel.

Cal. 4-fid, coloured, deciduous. Stam. 8, shorter than cal., inserted in 2 rows. Fruit fleshy.

1. D. *Mezéreum.** Cal. subternate, lateral, sessile, appearing before the de-
S. 3. (R.) E. S.-3. ciduous, lanceolate leaves; tube hairy.—Woods.
2. D. *Lauréola.* Cal. 4-cleft; racemes of about 5 glabrous, drooping,
S. 2-4. (—G.) E. S.-17. bracteated fl's; leaves persistent.—Woods.

ORDER XXII.—CELASTRINEÆ.

Shrubs with leaves having minute stipules, possessing an acrid principle, which especially abounds in the seed. *Sep.* 4-5, æstivation imbricate. Pet. 4-5. *Stam.* alternate, and with the pet. perigynous. *Ov.* 3 *or* 4-*celled;* cells 1 or more-seeded; *placentæ in axis. Fruit capsular or drupaceous. Seeds definite*, ascending, often with an arillus; *alb. small, fleshy;* embr. straight; rad. inferior.

Leaves compound. Styles 2 or 3.	1. STAPHYLÆA.
Leaves simple. Style 1.	2. ENONYMUS.

1. STAPHYLÆ'A.

Cal. 5-parted, coloured with a cup-shaped disk at base. Pet. and stam. 5. Capsule 2-3-celled. Seeds few, without an arillus.

1. S. *pinnáta.** Leaves 5-7-pinnate; petioles without glands; fl's race-
S. 6. (W.) E.-1. mose; capsule bladdery.—Hedges near Windermere.

2. ENO'NYMUS. *L.* Spindle-tree.

Cal. flat, 4-5-cleft, with a peltate disk at base. Pet. and stam. 4 or 5. Caps. 3-5-celled and valved. Seeds solitary, arillate.

1. E. *Europæ'us.* Fl's mostly with 4 stam.; pet. oblong, acute; leaves ovate-
S. 5. (G.) 16. lanceolate, minutely serrate.—Woods.

ORDER XXIII.—RHAMNEÆ.

Trees or shrubs, often spiny, the fruit violently cathartic. Leaves simple. Fl's sometimes declinous. Cal. 4 or 5-cleft. *Stam. perigynous, as many as, and opposite to pet.* Ov. 2, 3, or 4-celled, surrounded by a fleshy disk; *placentæ axile, seeds solitary, erect;* alb. small; embr. long, straight.

1. RHA'MNUS. *L.* Buckthorn.

Cal. urceolate, 4-5-cleft. Pet. 4 or 5, sometimes 0. Berry 2-4-celled.

1. R. *Cathárticus.* Spines terminal; fl's 4-cleft, diæcious; leaves ovate, sharply
S. 5, 6, (—G.) E. I. 12. serrated; seeds 4.—Woods.

2. R. *Frangula.* Spines 0; fl's 5-cleft, perfect; leaves obvate, entire; seeds 2.
S. 5, 6, (G.W.) E.I. 9. Thickets.

ORDER XXIV.—ULMEÆ.

Trees or shrubs with slightly bitter and astringent properties, having rough, alternate leaves, with minute stip. Fl's in loose clusters, not in catkins, sometimes polygamous. *Cal. membranous,* inferior, *irregular. Pet.* 0. Stam. definite, erect in æstivation, inserted on base of cal. *Ov.* free, 2-*celled; placentæ axile;* stigmas 2. Fruit 1-2-celled, indehiscent, membranous, or drupaceous. *Seeds solitary,* pendulous; *alb.* 0; embr. straight or curved *with foliaceous cot.,* and inferior rad.

1. ULMUS. *L.* Elm.

Fl. perfect. Cal. campanulate, 4-5-cleft, persistent. Stam. 3-6. Styles 2. Capsule compressed, winged all round, 1-seeded.

* Leaves at length quite smooth above, smooth or glandular beneath, ovate-lanceo-

1. U. *glábra.* late, acuminate, doubly and evenly crenate-serrate, cu-
T. 3. (—P.) E.-5. neate and oblique at base; a few hairs in axillæ; branches smooth, wiry, weeping; fruit obovate, deeply cloven,

β *glandulósa.* leaves very glandular beneath.

γ *latifólia.* leaves oblong, acute, very broad.

* Leaves scabrous above,

† hairy or downy beneath.

‡ Fruit deeply cloven.

2. U. *campéstris.* oblong; leaves doubly and irregularly serrated, rhomboid-
T. 4, 5. (—P.) 15. ovate, acuminate, obliquely cuneate at base, axillæ glabrous; branches wiry, slightly corky, pubescent when young.

3. U. *suberósa.* Fruit nearly round; leaves doubly and regularly serrated,
T. 3. (—P.) 7. nearly orbicular, acute, obliquely cordate at base, axillæ hairy; branches spreading, winged, with corky excrescences, very hairy when young.

*

‡ Fruit slightly cloven,

4. U. *major.* *T.* 3. (—P.) E.-? obovate; branches spreading, winged, with corky excrescences, smooth when young; leaves ovate-acuminate, very oblique at base, doubly and regularly serrated, with a dense tuft of white hairs in their axillæ.

5. U. *montána.* *T.* 3, 4. (—P.) 17. Fruit oblong-rhomboid; branches not corky, always smooth, cinereous; leaves ovate-cuspidate, cuneate, and nearly equal at base; axillæ without hairs.

† Leaves smooth beneath, simply crenate-serrate, coriaceous,

6. U. *carpinifólia.* *T.* 4. (P.) E.-1. strongly veined, slightly oblique and cordate at base; branches nearly smooth.

7. U. *stricta.* *T.* 4. (—P.) E.-? Leaves obovate, cuspidate, nearly doubly and evenly crenate-serrate, cuneate, oblique at base, with hairy axillæ, branches smooth, rigid, erect, very compact.

β. *parvifólia.* leaves much smaller, finely crenate.

ORDER XXV.—ACERINEÆ.

Trees often with a saccharine juice. Leaves opposite, simple, lobed, exstipulate. Fl's often polygamous in axillary corymbs or racemes. *Cal.* 5, rarely 4-9-parted. *Pet.* as many; *imbricate in æstivation.* *Stam. generally* 8, *on an hypogynous disk; anth. opening longitudinally.* Ov. 2-lobed, 2-celled; style 1; stigmas 2; *placentæ axile. Fruit winged, separating into* 2 indehiscent, 1-2-*seeded carpels. Seeds exarillate;* embr. curved, exalb. with foliaceous, wrinkled cot., and an inferior rad.

1. A'CER. *L.* Maple.

Fl's polygamous. Cal. 5-cleft. Stam. mostly 7 or 9.

1. A. *campéstre.* *T.* 5, 6. (—G.) 14. Corymbs erect; leaves of 5 obtuse, inciso-serrate lobes; stam. of the barren fl's, as long as cor.—Woods.

2. A. *Pseudoplátanus.* *T.* 5. 6. (—G.) ? 11. Racemes pendulous; leaves of 5 acuminate, unequally serrate lobes; stam. twice as long as cor.—Woods.

ORDER XXVI.—POLYGALEÆ.

Herbs or shrubs, with mostly simple leaves; stip. 0; with milky roots, and mostly bitter qualities. *Sep.* 5, *imbricate, irregular,* 2 interior larger petaloid. *Pet. unequal,* usually 3, of which 1 is anterior and larger, (the keel), and 2 lateral smaller; keel often crested. *Stam.* 8; fil. monadelphous, the tube slit; *anth.* 1-*celled, opening by pores.* Ov. 2-3-celled, with solitary ovules; style single. Capsule 1-3-celled, with a loculicidal dehiscence, and *axile placentæ. Seeds* pendulous, with an arillus or caruncle; *embr. in a small,* fleshy *alb.*; the rad. superior and next hilum.

1. POLY'GALA. *L.* Milk-wort.

Pet. slightly connected together, the lower one keel-shaped. Capsule compressed, 2-celled, 2-valved. Seeds solitary, with a 4-pointed caruncle at base.

1. P. *vulgáris.* *P.* 5-9. (B.) 20. Keel crested; fl's in a terminal raceme; wings of cal. obovate, mucronate; lateral bracts longer than pedicels; lower leaves smaller than upper.—Dry pastures.

β. *oxýptera.* racemes 1-sided; cal.-wings narrower.

γ. *amára.* cal.-wings not mucronate; lateral bracts shorter than pedicels; upper leaves larger than lower.

ORDER XXVII.—HYPERICINEÆ.

Herbs, shrubs, rarely trees, with a resinous, aromatic or purgative juice. Leaves opposite, entire, exstipulate, usually with transparent dots, and fringed with black glands. Sep. 4-5, imbricated. *Pet.* as many as sep., *oblique, twisted in æstivation, bordered with black glands. Stam. indefinite* polyadelphous, or 5 fertile and numerous barren ones, united so as to form 5 fringed scales. Ov. of 3-5 carpels, with as many *long styles;* stigmas rarely sessile. Fruit mostly a dry or fleshy capsule, 1 or many-celled and valved, the *placentæ being axile. Seeds indefinite, exalb.;* embr. straight or curved; rad. inferior.

Stam. indefinite, united at the base, into 3 or 5 setæ. . .	1. HYPERICUM.
Stam. 5, with 5 intermediate, fringed scales. . . .	2. PARNASSIA.

1. HYPE'RICUM. *L.* St. John's-wort.

Cal. 5-parted, or 5-cleft. Pet. 5. Styles 3, rarely 5. Caps. more or less perfectly 3-celled.

* Styles 5.

1. H. *calycínum.** Fl. solitary; sep. unequal, obovate, obtuse; stem shrubby, branched, square.—Bushy places.
P. 7-9. (Y.) S.I.-3.

* Styles 3.

† Sepals more or less unequal.

2. H. *Androsæ'mum.* Stem shrubby, compressed, 2-edged; capsule fleshy, imperfectly 3-celled; leaves ovate, sessile.—Bushy places.
S. 7. (Y.) 10.

3. H. *humifúsum.* Stem prostrate, somewhat compressed, nearly round; capsule dry, 3-celled; sep. oblong, obtuse, mucronate; leaves oblong, with flat margins.—Gravelly heaths.
P. 7, 8. (Y.) 20.

4. H. *linariifólium.* Stem ascending, terate; capsule dry, 3-celled; sep. lanceolate acute; leaves linear, obtuse, with revolute margins.—Banks of Teign, Devon. Cape Cornwall.
P. 7, 8. (Y.) E.-2.

† Sepals equal,

‡ their margins fringed with glands.

§ Stem smooth.

‖ Leaves with revolute margins; pet. with black dots on both sides; stem somewhat 2-edged.

5. H. *barbàtum.** Leaves ovate-lanceolate, with black dots, clasping the stem.—Hedge, Aberdalgy, Perthshire.
P. 8, 9. (Y.) S.-1.

‖ Leaves with plane margins; pet. not dotted; stem round.

6. H. *montànum.* Sep. lanceolate-acute, fringed with stalked glands: leaves ovate-oblong, sessile, dotted near the margin.—Hills.
P. 7, 8. (Y.) E.8.

7. H. *púlchrum.* Sep. broadly ovate, obtuse, fringed with sessile, black glands; leaves cordate, clasping, with scattered dots remote from margin.—Dry banks.
P. 6, 7. (Y.) 20.

§ Stem rough.

8. *hirsútum.* Stem erect; pet. linear-oblong, edged with stalked glands; leaves ovate, downy.—Thickets.
P. 7, 8. (Y.) 16.

9. H. *elódes.* Stem procumbent; pet. ovate, entire, without glands; leaves rounded and shaggy like the stem.—Bogs.
P. 7, 8. (Y.) 10.

‡ Margins of sep. without glands.

§ Stem 2-edged, or not prominently quadrangular; pet. streaked and dotted beneath.

10. H. *perforátum.* P. 7, S. (Y.) 19. — Sep. erect, lanceolate; leaves from linear to elliptic-oblong, obtuse, with pellucid dots; stem 2-edged.—Woods.

11. H. *dúbium.* P. 7, 8. (Y.) E. S.-9. — Sep. reflexed, elliptical, entire; leaves elliptic-ovate, obtuse, without (or with a few) pellucid dots; stem obscurely 4-angular.—Hilly places.

β. *maculátum.* — sep. ovate-lanceolate, denticulate, mucronate; stem more decidedly 4-angular.

§ Stem 4-winged; pet. not streaked beneath.

12. H. *quadrángulum.* P. 7. (Y.) 20. — Stem erect; leaves oval-oblong, with pellucid dots; sep. erect, lanceolate, acuminate, entire.—Wet places.

2. PARNA'SSIA. *L.* Grass of Parnassus.

Cal. deeply 5-cleft. Pet. 5. Stam. 5, with 5 fringed scales between. Caps. 1-celled, 4-valved, each valve with a linear many-seeded placenta.

1. P. *palústris.* P. 8, 9. (W.) 16. — Fil. of the scales 9-13; pet. with a short claw; root-leaves cordate, stalked, those of stem clasping.—Damp places.

ORDER XXVIII.—ELATINEÆ.

Inconspicuous, unimportant herbs, growing in wet places, with fistular, rooting stems, and opposite, simple, stipuled leaves. Sep. 3-5. *Pet. as many as sep.*, imbricated. *Stam. hypogynous, once, or twice as many as pet.* Ov. 3-5-celled, with as many styles. *Caps.* 2-5-celled, 3-5-valved, *loculicidal, with a* 4-winged, *central placenta. Seeds* numerous, *exalbuminous*, wrinkled transversely, with a straight embr.; rad. turned to hilum.

1. ELA'TINE. *L.* Water-wort.

Cal. 3-4-parted, persistent. Pet. 3-4. Stam. 3-4, or 6-8. Styles 3-4, short. Caps. 3-4-valved and celled.

1. E. *Hexándra.* *A.* 8. (R.) 2. — Leaves longer than petioles; fl's stalked, erect, with 6 stam., and 3 obovate pet.; caps. 3-celled; seeds straight.—Margins of ponds.

2. E. *Hydropíper.* *A.* 8. (R.) E.I.-1. — Leaves shorter than petioles; fl's nearly or quite sessile; stam. 8; pet. 8, ovate; capsule 4-celled; seeds much curved.—Under water.

ORDER XXIX.—TILIEÆ.

Mostly trees or shrubs, having a mucilaginous and slightly astringent juice. Leaves simple, stipulate, alternate. *Sep.* 4 or 5, æstivation *valvate.* Pet. 4 or 5, imbricated or twisted, sometimes 0. *Stam. indefinite, distinct, hypogynous.* Ov. of 2-10 mostly united carpels; style 1; stigmas as many as carpels. Fruit dry, or pulpy, sometimes winged, many-celled, or 1-celled by abortion, placentæ in axis; *embr. erect*, in axis of *a small*, fleshy *alb.*; rad. next hilum.

1. TI'LIA. *L.* Lime, or Linden-tree.

Sep. 5, deciduous. Pet. 5, with or without a gland at base. Stam. indefinite. Ov. 5-celled, cells 2-seeded. Fruit 1-celled, 1-2-seeded.

* Ped. many-fl'd; leaves glabrous, obliquely cordate; glands 0 at base of pet.
1. T. *Europæ'a.** Leaves twice the length of petioles; fruit coriaceous, not
T. 7. (y. G.) 11. angular, downy.—Woods.
2. T. *parvifólia.* Leaves about as long as petioles; fruit brittle, thin, angu-
T. 8. (—Y.) 4. lar, nearly glabrous.—Woods.
* Ped. about 3-fl'd; leaves downy, especially beneath, obliquely cordate; glands 0.
3. T. *grandifólia.** Young branches hairy; leaves longer than petioles; fruit
T. 6, 7. (—Y.) 2. 5-angled, woody, downy, turbinate.—Woods.
β. *corallína.* fruit globose, woolly.

ORDER XXX.—MALVEÆ.

Innocuous, mucilaginous herbs, shrubs, or trees, with alternate, stipulate leaves, mostly clothed with a stellate pubescence. *Sep.* 5, 3 or 4, *valvate*, surrounded by an invol. *Pet.* as many as sep., *twisted in æstivation*, usually with their lower lamina hypogynous, and their upper adhering to the base of the tube of the *numerous monadelphous, hypogynous stam.*; *anth.* 1-celled, turned inwards, opening across. *Ov.* formed by *several carpels round an axis*, distinct or united; styles as many as carpels. Fruit mostly capsular, many-celled, the cells 1 or more-seeded; *alb.* 0; embr. curved; cot. twisted and doubled.

Invol. 3-lobed.	1. LAVATERA.
Invol. of 3 distinct bracts.	2. MALVA.
Invol. 6-9-fid.	3. ALTHÆA.

1. LAVA'TERA. *L.* Tree-Mallow.

Invol. 3-lobed. Cal. 5-fid. Carpels numerous, arranged in a whorl.

I. L. *arbórea.* Stem woody; leaves with about 7, angular, plaited, velvety
B. 7, 9. (p. R.) 4. lobes; ped. axillary, 1-fl'd, aggregate.—Rocky islets.

2. MA'LVA. *L.* Mallow.

Invol. of 3 distinct bracts. In other respects as *Lavatera.*

* Stem erect; fruit-stalks erect; leaves reniform,
1. M. *moschátа.* of 5 or 7 deep, pinnatifid lobes, with linear segments, lower
P. 7, 8. (R.) 19. ones inciso-crenate; bracts linear-lanceolate; fruit hairy.
—Gravelly soil.
2. M. *sylvéstris.* Leaves with 7 crenate, rather acute lobes; bracts lanceo-
P. 6-9. (P.) 20. late; fruit glabrous, reticulated.—Road sides.
* Stem decumbent; fruit-stalks bent down; leaves roundish-cordate,
3. M. *rotundifólia.* with 5 crenate lobes; bracts linear-lanceolate, shorter than
P. 6-8. (P.) 20. sep., which are much shorter than pet; stip. ovate.—
Waysides, &c.
β. *boreális.* bracts as long as sep., which equal pet.; stip. lanceolate.

3. ALTHÆ'A. *L.* Marsh-Mallow.

Invol. 6-9-fid. In other respects as *Lavatera.*

1. P. *hirsúta.* Ped. axillary. 1-fl'd, longer than the palmate, 5 or 3-acutely-
A. 6, 7. (—R.) E.-1. lobed, hispid leaves, the lower reniform, obtusely 5-lobed.
Near Cobham, Kent.

2. P. *officinális.* Ped. axillary, many-fl'd, shorter than the cordate or ovate
P. 8, 9. (—R.) 3. 3-5-lobed, crenate-serrate, soft, downy leaves.—Marshes.

ORDER XXXI.—GERANIEÆ.

Herbs or shrubs possessing astringent or aromatic qualities. Stems tumid at the joints, with leaves opposite each other, or the ped., with membranous stip. Sep. 5, imbricated, persistent, one sometimes spurred or saccate at base. *Pet.* 5, rarely 4, clawed, *twisted in æstivation. Stam. definite*, monadelphous, *hypogynous*, twice or thrice as many as pet. Ov. of 5 carpels, placed round an awl-shaped torus. *Fruit* of 5 membranous, *indehiscent pericarps, which adhere by their styles to the long-beaked torus*, and which, finally separating below at the base, are made to curl upwards by the elastic force of the styles. *Seeds* solitary, *exalbuminous. Embr. curved* and doubled up; cot. foliaceous, plaited; rad. pointing to base of cell.

Fil. 10 (or 5, as in 10 G.), all bearing anth. . . .	1. GERANIUM.
Fil. 10, 5 only bearing anth.	2. ERODIUM.

1. GERANIUM. *L.* Crane's-bill.

Sep. 5. Pet. 5. Stam. 10, rarely 5, slightly monadelphous, alternate ones larger, and with glands at their base. Pericarps each with a long, ultimately recurved, internally glabrous awn.

* Pet. twice as long as sep.
† Ped. 1-fl'd, with 1 leaf opposite to it.
1. G. *sanguíneum.* Leaves orbicular, in 7 deep, trifid lobes; caps. bristly at
P. 7. (P.) 12. summit; seeds smooth.—Rocky places.
β. *lancastriénse.* stem nearly simple, decumbent.
† Ped. 2-fl'd.
‡ Pet. deeply notched; ped. with 2 leaves at base.
2. G. *pyrenáicum.* Downy; stem round; leaves reniform, of 5-7 oblong, ob-
P. 6, 7. (—P.) 8. tuse, 3-fid lobes, toothed at end; caps. keeled, downy.—Pastures.
‡ Pet. entire, or nearly so; capsule even, hairy.
3. G. *sylváticum.* Fil. hairy; leaves sub-peltate, with 5-7 deep, acute, cut
P. 6, 7. (P.) 9. and serrated lobes; stem diffuse.—Woods.
4. G. *pratěnse.* Fil. glabreus; leaves palmate, with 5-7 multipartite lobes;
P. 6-8. (P.) 17. stem erect, corymbose.—Pastures.
* Pet. equal to, or somewhat longer than sep.; ped. 2-fl'd.
† Pet. entire.
‡ Ped. opposite to a single leaf.
5. G. *phæ'um.* Capsule keeled, hairy below, wrinkled above; leaves with
P. 5, 6. +P. W.) E. S.-9. 3-7 acute, cut, serrated lobes; stem erect.—Woods.
‡ Ped. with 2 leaves at base.
§ Leaves glabrous,
6. G. *lúcidum.* roundish, 5-lobed; lobes 3-fid., notched, obtuse, shortly
A. 6, 7. (R.) 16. mucronate; cal. pyramidal, angular; caps. wrinkled.—Walls.
β. *Ráii.* cal. shaggy; caps. keeled.
§ Leaves hairy, or downy.
7. G. *Robertiánum.* Leaves 3-nate or 5-nate; leafl. pinnatifid, segments mu-
A. 5-7. (R.) 20. cronate, hairy; caps. downy, wrinkled; seeds smooth.—Thickets.

β. *purpúreum.* capsule glabrous; leaves in less broad segments.
8. G. *rotundifólium.* *A.* 6, 7. (r P.) 8. Leaves roundish or reniform, cut, downy; caps. not wrinkled; seeds reticulated.—Waste places.

† Pet. notched.

‡ Ped. opposite a single leaf.

9. G. *pusillum.* *A.* 6, 9. (P.) 18. Stam. 5; leaves rounded or reniform, with 5-7 deep, 3-fid lobes; caps. even, keeled, downy; seeds smooth.—Waste ground.

β. *húmile.* leaves more finely cut.

10. G. *mólle.* *A.* 4-8. (P.) 20. Stam. 10; leaves rounded or reniform, in 7-9 deep, cuneate, 3-fid segments; caps. wrinkled; seeds smooth.—*Passim.*

‡ Ped. with 2 deeply divided leaves at base; seeds dotted.

11. G. *dissectum.* *A.* 5, 7. (—R.) 20. Ped. shorter than the 5-partite leaves, the lobes linear, 3-fid, or cut; pet. notched; capsules hairy.—Gravelly places.

12. G. *columbínum.* *A.* 6, 7. (—R.) 15. Ped. longer than leaves, which are in 5-7, deep, laciniated segments; pet. entire; caps. glabrous.—Gravelly soil.

2. ERODIUM. *L'Herit.* Stork's-bill.

Sep. 5. Pet. 5. Stam. 10, 5 bearing anth., with glands at base, and 5 without Pericarp, each with a long, ultimately spirally twisted, internally bearded awn.

1. E. *marítimum.* *P.* 5-9. (—R.) 6. Leaves undivided, ovate-cordate, lobed, crenate; ped. 1 or 2-fl'd; stem depressed, slightly hairy.—Sandy coasts.

2. E. *cicutárium.* *A.* 6-8. (—P.) 20. Leaves pinnate, leafl. sessile, pinnatifid, cut; ped. many-fl'd; stem prostrate, hairy.—Waste ground.

3. E. *moschátum.* *A.* 5, 6. (—R.) 6. Leaves pinnate; leafl. ovate, nearly sessile, not pinnatifid, unequally cut; stem depressed, hairy.—Waste places.

ORDER XXXII.—BALSAMINEÆ.

Succulent herbs possessed of no remarkable qualities, having simple, exstipulate leaves. Sep. 5, irregular, imbricate, deciduous; the lateral ones external, the 2 dorsal ones connate coloured, the lower spurred. *Pet.* 4, by the abortion of the upper one, *irregular*, united in lateral pairs, *æstivation convolute. Stam.* 5, *free, hypogynous*, opposite the sep. Ov. of 5 combined carpels, 5-celled; stigma sessile. Caps. 5-celled, by the projecting arms of the *axile placenta*, opening with remarkable elasticity by 5-valves. Seeds many, or solitary, suspended; *alb.* 0; embr. straight; rad. superior.

1. IMPA'TIENS. *L.* Balsam.

The 2 lateral external sep. deciduous. Pet. very irregular. Anth. united. Caps. opening with elasticity.

1. I. *noli-me-tangere.** *A.* 7-9. (Y. & R.) 3. Ped. solitary many-fl'd; leaves ovate, with coarse serratures without glands; spur entire.—Damp woods.

2. I. *fúlva.** *A.* 8. (+Y. & R.) E.-1. Ped. solitary, about 4-fl'd; leaves ovate, with coarse, glandular serratures; spur. emarginate.—Banks of Wey, Surrey.

ORDER XXXIII.—OXALIDEÆ.

Mostly herbs, under shrubs or trees, with alternate exstipulate leaves, abounding in oxalic acid. Sep. 5, imbricate. *Pet.* 5, equal, *with a* spirally *twisted æstivation. Stam.* 10, *hypogynous*, 5 outer ones shorter than the inner, the fil. combined at base. Ov. of 5 carpels; styles distinct. Caps. 5 or 10-valved. *Seeds* few, *fixed to the axile placenta*, and enclosed in a fleshy, elastic integument (arillus), which, when opening, expels the seed with force. *Embr.* as *long as the* cartilaginous *alb.*, the rad. towards the hilum.

1. O'XALIS. *L.* Wood-sorrel.

Sep. 5, connected below. Pet. 5, slightly cohering by the claws. Caps. 5, angular, 2 or many-seeded.

1. O. *Acetosélla.* *P.* 5. (W.) 20. Stem 0; scape 1-fl'd, longer than the ternate, hairy, exstipulate leaves.—Shady woods.
2. O. *Corniculáta.* *A.* 6-9. (Y.) E.-3. Stem branched, branches procumbent; ped. 2-fl'd, shorter than the ternate, stipuled leaves.—Devon. Cornwall.

ORDER XXXIV.—LINEÆ.

Mostly herbs, some possessing purgative qualities. Leaves simple, entire, exstipulate. *Sep.* 3-5, persistent, *imbricate. Pet.* as many as sep., *twisted in æstivation*, fugaceous. *Stam. as many as pet.*, united below in an *hypogynous* ring, from which arise as many abortive stam. Ov. with as many cells and styles as sep. Caps. having each cell completely or partially divided by an imperfect dissepiment, arising from the dorsal suture opening by 2 valves at apex; seeds oily and mucilaginous, 2 in each spurious cell compressed, inverted; *alb.* 0; embr. straight, the rad. superior, pointing to hilum.

Sep., pet., and stam. 5.	1. LINUM.
Sep., pet., and stam. 4.	2. RADIOLA.

1. LI'NUM. *L.* Flax.

Sep., pet., and stam. 5. Caps. spuriously 10-celled, 10-valved.

Leaves alternate.

† Sep. acuminate, 3-nerved,

1. L. *Usitatissimum.** *A.* 7. (B.) 10. ovate; stem solitary; leaves lanceolate, distant.—In cultivated fields.
2. L. *angustifólium.* *P.* 7. (—B.) 3. Sep. elliptical; stems numerous; leaves linear-lanceolate.—Sandy and chalky pastures.

† Sep. obtuse, obovate, obscurely 5-ribbed.

3. L. *perénne.* *P.* 6, 7. (B.) 5. Leaves linear-lanceolate, acute; stems numerous; fruit-stalks erect.—Chalky hills.

* Leaves opposite,

4. L. *cathárticum.* *A.* 6, 7. (W.) 20. obovate-lanceolate; sep. elliptical, acuminate, serrated; pet. acute; stem forked above.—Dry pastures.

2. RADI'OLA. *Gmel.* Flax-weed.

Sep. 4, connected below, deeply 8-fid. Pet. and stam. 4. Caps. spuriously 8-celled, 8-valved.

R. *millegrána.* *A.* 7, 8. (W.) — Stem frequently dichotomous; ped. solitary: leaves entire, 13. glabrous.—Damp places.

ORDER XXXV.—CARYOPHYLLEÆ.

Herbs possessing no important qualities. Stems swollen at joints. *Leaves opposite*, entire, *without stip.* Fl's very rarely diclinous. Sep. 4 or 5, distinct, or united. Pet. 4 or 5, mostly with claws, sometimes 0. *Stam.* once or twice as many as pet., or on an *hypogynous* ring, and inserted along with them on the pedicel of ov.; anth. innate, opening longitudinally. *Ov.* borne by a pedicel, (gynophore). *of* 2-5 *carpels*, 1 *or spuriously more-celled;* stigmas 2-5, sessile, filiform, papillose on inner surface. *Caps.* 2-5-valved, or toothed, *with a central placenta which is free.* or slightly adherent to edges of dissepiments. Seeds mostly indefinite; embr. curved round the outside of a mealy alb.; sometimes straight, rarely spiral. without alb.: rad. pointing to hilum.

- * Sep. united into a tube.
  - † 1 Stigmas 2.
    - Cal. with a few imbricated bracts at its base, or at the base of pedicels. . . . . } 1. DIANTHUS.
    - Cal. naked at base. . . . . 2. SAPONARIA.
  - † 2 Stigmas 3.
    - Caps. fleshy, 1-celled. . . . . 3. CUCUBALUS.
    - Caps. dry, 3-celled at base. . . . . 4. SILENE.
  - † 3 Stigmas 5. . . . . 5. LYCHNIS.
- * Sep. distinct.
  - † Styles 2 or 3. Pet. 4 or 5.
    - ‡ 1 Pet. bifid. Stam. 10. . . . . 6. STELLARIA.
    - ‡ 2 Pet. entire, or slightly emarginate, or 0. Stam. 8-10.
      - Pet. conspicuous. . . . . 7. ARENARIA.
      - Pet. very minute. . . . . 8. CHERLERIA.
    - ‡ 3 Pet. jagged or toothed at end. Stam. 3, 4, or 5 . 9. HOLOSTEUM.
  - † Styles 4 or 5.
    - Pet. bifid or notched, 4 or 5. . . . 10. CERASTIUM.
    - Pet. entire or 0.
      - Stam. 4. Pet. shorter than sep. or 0. . . 11. SAGINA.
      - Stam. 5-10. Pet. longer than sep. . . 12. SPERGELLA.

Tr. I. *SILENIDÆ.* *Sep. united into a tube.*

1. DIA'NTHUS. *L.* Pink.

Cal. 5-toothed, with 2 or 4 imbricated, opposite bracts at base. Pet. 5, clawed. Stam. 10. Styles 2. Caps. 1-celled, many-seeded, opening at top with 4 valves. Seeds peltate, keeled.

* Bracts enclosing several fl's, (except 1 β.)

1. D. *prólifer.* *A.* 7. (R.) E.-1. — Stem glabrous; bracts membranous, ovate, obtuse, smooth, longer than cal., the outer ones shorter, mucronate.—Sandy places.

β. *diminútus.* — dwarfish, 1-fl'd.

2. D. *Arméria.* Stem downy; bracts herbaceous, lanceolate-subulate,
A. 7, 8. (R. ∴ W.) E. S.-8. downy, as long as cal.—Pastures; waste places.

* Bracts enclosing a single fl. only. Leaves linear, or linear-lanceolate.

† Bracts 2, (except 3 β,) half the length of tube of cal., ovate-aristate.

3. D. *deltoides.* Lower leaves obtuse, rough on keel and edges; stem leaves
P. 6-9. (R.* W.) E.-9. acute, and as well as stem, downy; pet. obovate, toothed.
—Pastures.

β. *glaúca.* bracts usually 4; leaves glaucous; fl. nearly white.

† Bracts more than 2, quarter the length of tube of cal.

4. D. *cæsius.* Stem 1-fl'd; bracts adpressed, ovate, obtuse, pointleted;
P. 6, 7. (R.) E.-1. leaves rough at edge; pet. unequally notched, bearded.—
Cheddar.

5. D. *caryophýllus.** Stem more than 1-fl'd; pet. crenate-dentate, ovate, gla-
P. 7, 8. (—R.) E.-2. brous; leaves smooth at edges.—Ruins, Kent.

6. D. *plumárius.* Stem more than 1-fl'd; pet. multifidly digitate, downy in
P. 6. (—R. *v.* W.) E.-1. centre; leaves with rough edges.—Ruins, Shropshire.

2. SAPONA'RIA. *L.* Soap-wort.

Cal. 5-toothed, without bracts at base. Claws of pet. as long as cal. Seeds globular or reniform. In other respects as *Dianthus.*

1. S. *officinális.** Cal. cylindrical, glabrous; leaves ovate-lanceolate, ribbed;
P. 6-9. (—R.) 13. fl's fascicled, corymbose.—Hedge banks.

β. *hýbrida.* pet. cohering; upper leaves combined, sheathing.

3. CUCU'BALUS. *L.*

Cal. naked at base. Styles 3. Fruit a 1-celled, globose berry. Seeds reniform. In other respects as *Dianthus.*

1. C. *bacciférus.** Stem spreading, branched; leaves ovate, acute; cal. cam-
P. 8. (W.) E.-1. panulate; pet. distant.—Isle of Dogs, near London.

4. SILE'NE. *L.* Catch-fly.

Cal. tubular, often inflated, 5-toothed, naked at base. Pet. clawed, mostly crowned at the mouth, the limb generally notched or bifid. Stam. 10. Styles 3. Caps. dry, 3-celled at base, 6-valved.

* Flowers diœcious. Stem nearly simple. Panicle of opposite many-fl'd racemes.

1. S. *Otites.* Pet. linear, undivided, without scales in throat; leaves
P. 6. (—Y.) E.-2. spathulate, those of stem linear.—Sand fields.

☞ See also 9 S., which is often diœcious.

* Flowers perfect.

† Cal. bladdery, inflated, reticulated, with acute teeth.

2. S. *infláta.* Fl's drooping, numerous, in terminal panicles; pet. deeply
P. 6 8. (W.) 20. cloven, segments narrow, without a scale in throat.—
Way-sides.

β. *hirsúta.* stem and leaves hairy; cal. downy.

3. S. *marítima.* Fl's erect, mostly solitary, or in few-fl'd, terminal panicles;
P. 6-8. (W.) 18. pet. slightly cloven, with a scale in throat.—Sea-shore.

† Cal. not bladdery, swollen, or tubular,
‡ pubescent. Stem elongated. Pet. with a cleft scale in throat.
§ Fl's in leafy racemes, alternate. Plant hairy, viscid.

4. S. *A'nglica.* *A.* 6, 7. (W.) 11. — Pet. slightly bifid; cal. cylindrical in fl., ovate and deflexed in fruit.—Sandy fields.

β. *quinque vúlnera.** pet. entire, spotted with red; cal. erect.

§ Fl. in panicles.
‖ Stem branching, forked. Fl's in the forks, or terminal.

5. S. *cónica.* *A.* 5-7. (p. R.) E.-1. — Cal. with 30 furrows, conical, umbilicate at base; pet. obcordate; leaves linear, downy.—Sand fields, Kent, near Bury.

6. S. *noctiflóra.* *A.* 7, 8. (W.) 6. — Cal. with 10, branching, hairy, glandular ribs, elliptic-oblong; pet. deeply bifid; leaves lanceolate, the lower obovate.—Sand fields.

‖ Stem not branching, but bearing an elongated, 1-sided panicle, with drooping, trichotomous, 3-7-fl'd, opposite branches; cal. swollen; pet. bifid, with linear segments.—Chalky places.

7. S. *nútans.* *P.* 6, 7. (W.) E. S.-4.

‡ Cal. glabrous.

8. S. *Arméria.** *A.* 7, 8. (R.) E. I.-2. — Stem elongated, bearing a crowded corymb of fl's; pet. notched, with subulate scales in throat; cal. clavate; leaves ovate-lanceolate.—Banks of the Roe, Derry. Near Kilrush.

9. S. *acaúlis.* *P.* 7, 8. (+R.) 2. — Stem short, tufted, 1-fl'd; pet. emarginate, with a notched scale in throat; leaves linear; cal. campanulate.—Mountain.

5. LY'CHNIS. *L.* Campion.

Often diœcious. Cal. tubular, 5-toothed. Pet. 5, clawed. Stam. 10. Styles 5. Caps. 1-or half-5-celled, 5 or 10 toothed.

* Fl. diœcious, (except in 1 γ.)

1. L. *diúrna.* *P.* 5, 6. (R.) 19. — Villous; pet. bifid; leaves ovate, acute; cal.-teeth of the fertile fl's triangular; caps. globose.—Hedge banks.
   β. *sylvéstris.* — fl's white.
   γ. *vespertina.* — fl's often perfect reddish-white; cal.-teeth linear-lanceolate.

* Flowers perfect.
† Stem villose.

2. L. *Flos-cúculi.* *P.* 5, 6. (R.) 20. — Pet. deeply 4-cleft, with a scale in throat; cal.-teeth, short; fl's loosely panicled; stem viscid.—Damp fields.

3. L. *Githágo.* *A.* 6-8. (P.) 20. — Pet. entire, without a scale; cal.-teeth longer than its tube or the pet.; fl. solitary, long-stalked.—Corn-fields.

† Stem glabrous,

4. L. *Viscária.* *P.* 6. (R.) E. S.-2. — viscid below joints; pet. emarginate, with a scale in throat; leaves lanceolate, fringed at base.—Rocks.

5. L. *alpina.* *P.* 6, 7. (R.) S.-1. — Stem not viscid; pet. cloven, scale in throat obsolete; leaves linear-lanceolate, naked at base.—Top of Clova Mountains.

Tr. II. *ALSINIDÆ. Sep. distinct.*

6. STELLA'RIA. *L.* Stitch-wort.

Sep. 5. Pet. 5, bifid, or deeply cloven. Stam. 10. Styles 3. Caps. 6-valved or toothed.

* Stem with a hairy line, alternately between each joint.

1. S. *cerastioides.* *P.* 6. (W.) S.-1. — Pet. twice as long as sep., which are downy beneath; leaves sessile, elliptic-oblong, bluntish, smooth; styles and teeth of capsule variable in number.—Highland mountains.

2. S. *média.* *A.* 4-11. (W.) 20. — Pet. not longer than sep.; leaves usually ovate, acuminate, stalked, upper sessile; stam. 3-10.—Passim.

β. *Drummóndii.* pet. absent!

* Stem without an alternate hairy hue.

† Ped. much longer than the stem.

3. S. *scapígera.* *P.* 6. (W.) S.-1. — Leaves linear-lanceolate, with pubescent margins; sep. fringed, 3-nerved, as long as pet.—Loch Nevis, near Dunkeld.

† Ped. shorter than the stem.

‡ Stem downy above (S. 4), or with 4 rough angles (S. 5).

4. S. *némorum.* *P.* 5, 6. (W.) E. S.-8. — Lower leaves cordate, stalked, upper ovate, sessile, entire; panicle forked; ped. alternately pubescent.—Damp woods.

5. S. *Holóstea.* *P.* 5. (W.) 20. — Leaves lanceolate-attenuated, acute, sessile, with a finely serrated margin and keel; panicle forked, ped. glabrous.—Hedges.

‡ Stem smooth, quadrangular. Leaves sessile, entire.

§ Pet. nearly as long as, or longer than the 3-nerved sep.; leaves linear-lanceolate.

6. S. *graminéa.* *P.* 5. (W.) 20. — Fl. in a forked panicle; leaves ciliated below, not glaucous; bracts scarious, with ciliated margins.—Heaths.

β. *Babingtónii.* leaves linear, with a lanceolate point, not ciliated below.

7. S. *glaúca.* *P.* 6, 7. (W.) 15. — Fl. solitary, or in a few-fl'd corymb; leaves not ciliated, glaucous; bracts with scarious and glabrous margins.—Marshes.

§ Pet. shorter than the lanceolate 3-nerved sep.; leaves oblong-lanceolate, acute, with a callous point, slightly ciliated below; fl's lateral and terminal, panicled; bracts scarious, with smooth margins.—Wet places.

8. S. *uliginósa.* *A.* 6. (W.) 20.

7. ARENA'RIA. *L.* Sandwort.

Sep. 5. Pet. 5, entire. Stam. 8-10. Caps. 3, 4, or 6-valved. *Leaves without stip*

* Leaves broad, elliptical, ovate, or spathulate.

† Pet. longer than sep.

‡ Leaves fleshy, and with the stem glabrous.

1. A. *peploides.* *P.* 9-9. (W.) 11. — Leaves ovate, sessile, acute; sep. ovate, obtuse, 1-ribbed, shorter than pet; fl. sometimes diœcious.—Sea-shores.

2. A. *Novégica.* Leaves spathulate; sep. ovate, acute, with 3-5 obscure
P. 6. (W.) S.-1. ribs, half as long as pet.—Unst, Shetland.

‡ Leaves not fleshy, ciliated, roughish. Stem downy.

3. A. *ciliáta.* Leaves spathulate; stem much branched, procumbent;
P. 8, 9. (W.) I.-1. sep. ½ as long as pet., lanceolate, acute, prominently 3-ribbed.—Ben-bulben, Sligo.

† Pet. shorter than sep.; ped. long, 1-fl'd; leaves ovate, acute,

4. A. *trinérvis.* the lower petiolate, 3-nerved, ciliated; sep. lanceolate,
A. 5. (W.) 19. acute, obscurely 3-5-ribbed, rough on the middle one.—Shady moist places.

5. A. *Serpyllifólia.* Leaves all sessile, nerveless, roughish; sep. lanceolate,
A. 6. (W.) 20. acute, hairy, the outer ones 5-ribbed.—Dry waste places.

* Leaves narrow, linear or subulate.

† Sep. not longer than pet.

6. A *vérna.* Leaves acute, when dry 3-nerved; pet. obovate, as long as
P. 5-9. (W.) 5. the capsule and the lanceolate 3-nerved sep.—Mountain rocks.

β. *Gerárdi.* leaves bluntish, adpressed; pet. elliptical.

† Sep. longer than pet.

7. A. *rubélla.* Stems nearly simple, numerous; ped. terminal, downy,
P. 7. (W.) S.-1. 1-fl'd; leaves linear, obtuse, 3-ribbed; sep. 3-ribbed.—Tops of mountains.

8. A. *tenuifólia.* Stems much branched, dichotomous, panicled above; leaves
A. 6. (W.) E.-8. subulate, acute, 3-ribbed; sep. 3-ribbed.—Sandy fields.

9. A. *fastigiáta.* Stems erect, straight, densely corymbose; sep. white, much
A. 6. (W.) S.-1. acuminate, with 2 central, green ribs.—Mountains, Clova.

8. CHERLE'RIA. *L.* Cyphel.

Sep. 5. Pet. 5, very minute, notched, or 0. Stam. 10, with glands at base. Styles 3. Caps. 3-valved.

C. *sedoides.* Stems numerous, matted, close to the ground; leave
P. 6-8. (y. G.) S.-1. crowded, linear-subulate, finely ciliated; fl. solitary.—Mountain tops.

9. HOLO'STEUM. *L.* Jagged Chickweed.

Sep. 5. Pet. 5, jagged at end. Stam. 5, 3 or 4. Styles 3. Caps. nearly cylindrical, opening with 6 teeth.

1. H. *umbellátum.* Fl's umbellate; ped. pubescent, viscid; leaves elliptic-
A. 4. (r. W.) E.-1. ovate, acute.—Old walls.

10. CERA'STIUM. *L.* Mouse-ear-chickweed.

Sep. 4-5. Pet. 4 or 5, bifid or notched. Stam. 10, 5 or 4. Caps. opening with 10 teeth, rarely with 5 bifid valves.

* Pet. longer than sep.

† Leaves from ovate to lanceolate.

1. C. *aquáticum.* Leaves cordate-ovate, acuminate, sessile, the lowest stalked;
P. 7. (W.) 13. pet. bi-partite.—Wet places.

*

2. C. *alpínum.* Leaves from ovate to lanceolate, as well as the ascending
P. 6. (W.) E. S.-1. stem, with a long, silky pubescence; fl's few; bracts often with narrow, membranous margins; caps. curved at end; seed small, acutely tuberculated.—Mountains.

3. C. *latifólium.* Leaves elliptical or lanceolate; stem prostrate, cæspitose;
P. 5. (W.) E. S.-1. pubescence short, rigid; fl's 1, rarely 2 or 3; bracts herbaceous; caps. straight; seed large, rugose.—Mountains.

β. *nigréscens.* leaves roundish-ovate, dark green; fl's as long as ped.; stem short, densely leafy.—Unst, Shetland.

† Leaves narrow.

4. C. *arvénse.* Stem ascending, prostrate below; leaves linear-lanceolate,
P. 4-8. (Y.) 13. more or less pubescent, especially at base; sep. and bracts lanceolate, slightly acute, with membranous margins and apices.—Gravelly places.

β. *stríctum.* stem declinate, with sub-linear, acuminate, glabrous, or sub-hirsute leaves.—Great Arran Isle, Galway.

* Pet. shorter than or equal to sep.

† Stam 10; pet. about as long as cal.

5. C. *glomerátum.* Sep. lanceolate, acute, longer than ped.; leaves ovate;
A. 4-9. (W.) 20. sep. lanceolate, acute; bracts herbaceous; caps. ascending, with subulate teeth.—Banks.

6. C. *triviále.* Sep. oblong-ovate, bluntish, shorter than ped.; leaves ob-
P. 5-9. (W.) 20. long-lanceolate; bracts with membranous margins; caps. deflexed, with lanceolate teeth.—Waste places.

β. *hylostioides.* glabrous; internodes of stem alternately pubescent.

† Stam. 5 or 4.

7. C. *semidecándrum.* Leaves broadly ovate; sep. lanceolate, broadly membra-
A. 4, 5. (W.) 18. nous at margins and apices; bracts membranous in their upper half; caps. erect, longer than cal., at first deflexed, at length erect.—Dry places.

β. *pumílum.* bracts and sep. with a narrow, membranous margin; fruit-stalks scarcely longer than cal., reflexed.

γ. *pedunculátum.* bracts and sep. as last; fruit-stalks 2 or 3 times longer than cal.

δ. *atrovírens.* sep. with a narrow, membranous margin; bracts herbaceous; fruit-stalks as β.

ε. *tetrándrum.* pet., sep., stam., and styles 4; fruit-stalks reflexed; apex of sep. with a central line.

11. SAGI'NA. *L.* Pearl-wort.

Sep. 4. Pet. 4, rarely 5, shorter than sep., entire. Styles and stam. 4. Caps. 4-valved, or 8-toothed.

* Pet. shorter than cal.; caps. opening with 4 teeth, longer than cal.

1. S. *procúmbens.* Glabrous; stem very short, with elongated branches;
A. 5-9. (W.) 20. leaves linear, mucronate; pet. sometimes 0; ped. reflexed after flowering.—Waste ground.

β. *spinósa.* leaves minutely spinosely ciliated on edge.

2. S. *apétala.* — Stem glabrous, erect, or ascending, elongated, forked;
A. 5-9. (G.) 16. leaves ciliated, linear, mucronate; pet. minute; ped. always erect.—Dry places.
β. *glábra.* — leaves glabrous.
γ. *lævis.* — plant altogether smooth.
δ. *prostráta.* — plant deep green, very hairy, prostrate; leaves short.
3. S. *marítima.* — Stem slightly hairy, elongated, forked, with ascending
A. 5-9. (G.) 7. branches; leaves fleshy, blunt, glabrous; pet. 0; ped. always erect.—Sea-shore.

* Pet. as long as, or longer than cal.; caps. opening with 8 teeth.

4. S. *erécta.* — Stem 2-fl'd, glabrous; leaves linear-lanceolate, rigid, acute,
A. 5, 6. (—G.) 7. glaucous; sep. with broad, membranous margins.—Dry places.

12. SPERGE'LLA. Spurrey.

Pet. 5, longer than cal., entire. Sep. and styles 5. Stam. 5-10. Caps. 5-valved, many-seeded. *Stip.* 0.

1. S. *nodósa.* — Pet. much longer than cal.; leaves subulate, glabrous, the
P. 7, 8. (W.) 18. upper ones fasciculate, lower sheathing; ped. always erect.—Wet, sandy places.
2. S. *saginoides.* — Pet. shorter than cal., which is only half the length of
P. 6-8. (W.) 8 ? caps.; leaves linear, mucronate, smooth; ped. and cal. glandular-hairy.—Mountains.
β. *subuláta.* — leaves subulate, often ciliated, awned; stem, ped., and cal., glabrous.

ORDER XXXVI.—ILLECEBREÆ.

Herbs or half-shrubs with sessile, entire leaves, and *scarious stip.* Fl's with scarious bracts. Sep. 5, seldom 3 or 4, distinct or cohering. Pet. small, inserted on cal., as many as sep. or 0. Stam. variable in number; fil. distinct. Ov. 1-celled; styles distinct, or partially combined. *Fruit* small, dry, 1-celled, rarely 3-celled, indehiscent, or 3-*valved.* *Seeds* numerous, *on a* free, *central placenta*, or 1 and pendulous from a funicle arising from base of caps. *Embr.* more or less *curved round*, or on one side of *a farinaceous alb.*; rad. pointing to hilum.

* [1] Stigmas 2. Seed single.
Sep. horned at back. Caps. 5-valved. . . . 1. ILLECEBRUM.
Sep. not horned at back. Caps. indehiscent. . . . 2. HERNIARIA.
* [2] Stigmas 3.
Fruit 1-seeded. . . . . 3. CORRIGIOLA.
Fruit many-seeded. Stam. 3-5. Pet. emarginate. . . 4. POLYCARPON.
Fruit many-seeded. Stam. 10. Pet. entire. . . . 5. SPERGULARIA.
* [3] Stigmas 4. Pet. entire. . . . . 6. SPERGULA.

1. ILLECE'BRUM. *L.* Knot-grass.

Sep. 5, thickened, horned at the back. Pet. 0, or reduced to 5 subulate scales. Stigmas 2. Caps. 1-seeded, covered by the cal.

I. *verticillátum.* — Stem procumbent, filiform, glabrous; leaves broadly ovate;
A. 6, 7. (W.) E.-1. fl's axillary, in crowded whorls.—Marshes.

2. HERNIA'RIA. *L.* Rupture-wort.

Cal. deeply 5-cleft. Pet. 5, filiform. Stam. 5 fertile, and 5 sterile, inserted on a perigynous disk. Stigmas 2, nearly sessile. Fruit 1-seeded, indehiscent.

1. H. *glábra.* *P.* 7. (—G.) E. L.-2. — Stem herbaceous, prostrate; leaves oval, a little tapering at base; fl's sessile, in axillary clusters, coalescing into a slightly leafy spike.—South-western coasts.
   - β. *subciliáta.* — leaves more or less ciliated.
   - γ. *ciliáta.* — clusters distinct, not coalescing into a spike; leaves orbicular-ovate, ciliated.

3. CORRIGI'OLA. *L.* Strap-wort.

Cal. deeply 5-cleft. Pet. 5, as long as sep. Stam. 5. Stigmas 3, sessile. Fruit 1-seeded, indehiscent.

1. C. *littorális.* *A.* 6, 7. (W.) E.-1. — Stems numerous, leafy on that part which bears the fl's; leaves of stem oblong, narrow.—South-west coast.

4. POLYCA'RPON. *L.* All-seed.

Sep. 5. Pet. 5, emarginate. Stam. 3-5. Styles 3. Caps. 1-celled, 3-valved, many-seeded.

1. P. *tetraphýllum.* *A.* 5-8. (—G.) E.-4. — Stam. 3; stem-leaves in whorls of 4, those of the branches opposite.—Sea-coasts.

5. SPERGULA'RIA. *Pers.*

Sep. 5. Pet. 5, entire. Stam. 10. Styles 3. Caps. 3-valved, many-seeded.

1. S. *rúbra.* *A.* 6-9. (P.) 13. — Leaves flat on both sides, linear, tipped with a minute bristle; sep. lanceolate, obtuse, obscurely 3-nerved, equaling the caps.; seeds angular, rough, wingless.—Sandy fields.
1. S. *marína.* *A.* 6-8. (P.) 12. — Leaves convex below, fleshy, linear, pointless; sep. as last, but shorter than capsule; seeds nearly round and smooth, winged.—Sea-coast.
   - β. *obesior.* — caps. much larger than cal.

6. SPE'RGULA. *L.* Spurrey.

Sep. 5. Pet. 5. Stam. 5-10. Styles 5. Caps. 5-celled, 5-valved, many-seeded.

1. S. *arvénsis.* *A.* 6, 7. (W.) 20. — Leaves whorled, linear, convex above, flat beneath, minutely stipuled at base; fruit-stalks reflexed.—Cornfields.
   - β. *vulgáris.* — seeds covered with clavate papillæ.
   - γ. *pentándra.* — stam. usually 5; seed bordered.

ORDER XXXVII.—PORTULEÆ.

Succulent herbs or shrubs possessing no remarkable properties. *Leaves alternate* entire, *exstipulate.* Sep. 2, cohering at base. *Pet.* 5, distinct or cohering. Stam.

inserted on the pet., perigynous or hypogynous, 3 or more, often opposite pet. Ov. 1-celled; stigmas several, almost sessile. Capsule opening across, or by valves, many-seeded, or 1-seeded and indehiscent. *Placenta central. Embr. curved round a farinaceous alb.*; rad. long, next hilum.

1. MO'NTIA. *L.* Blinks.

Sep. 2, persistent. Pet. 5, unequal. Stam. 3, opposite the smaller pet. Stigmas 3, downy. Caps. 1-celled, 4-valved, 3-seeded.

1. M. *fontána.* Stem ascending; leaves opposite, spathulate, entire; ped.
A. 6-8. (W.) 20. often forked, nearly terminal.—Spongy, wet places.
β. májor. stem elongated, flaccid from growing in water.

ORDER XXXVIII.—POLYGONEÆ.

Mostly herbs, with leaves containing oxalic acid, and their roots possessing astringent properties. *Leaves* alternate, *with stip.* cohering round the stem in the form of an ochrea or boot. Fl. racemose, sometimes diclinous. Cal. free, often coloured, deeply cleft. *Pet.* 0. *Stam.* definite, inserted on base of cal. *Ov. of 3-carpels, 1-celled,* with 2, 3, or more styles or sessile stigmas. *Fruit usually a triangular nut. Seed* 1, *erect*; *embr.* inverted, *mostly on one side,* or in axis *of a farinaceous alb.*

Cal. 6-cleft, coloured. Styles 2-3.	1. POLYGONUM.
Sep. 6. Styles 3.	2. RUMEX.
Cal. 4-parted. Stigmas 2.	3. OXYRIA.

1. POLY'GONUM. L. Bistort. Persicaria. Knot-grass.

Cal. inferior in 5, deep, coloured, persistent segments. Stam. 5-8. Styles 2-3. Fruit a 1-seeded, trigonous, or compressed nut.

* Styles and stigmas 3. Fruit triquetrous. Ochreæ cylindrical.
† Leaves cordate-sagittate at base.
‡ Stem twining,
1. P. *convólvulus.* angular; segments of cal. bluntly keeled; fruit opaque,
A. 7, 8, (—G.) 20. striated with minute points.—Corn-fields.
β. alátum. segments of cal. winged.
2. P. *dumetórum.* Stem striated; segments of cal. with a membranous wing;
A. 7. (—G.) E.-1. fruit quite smooth and shining on surface.—Thickets.
‡ Stem erect,
3. P. *Fagopýrum.** not prickly; leaves acute; fruit with the angles even.—
A. 7, 8. (—R.) E. S.-? Cultivated ground.
† Leaves with a rounded or lanceolate base.
‡ Stem simple; ochreæ cylindrical; fl's spicate; root rhizomatous.
4. P. *viviparum.* Spike solitary, dense, with viviparous buds; leaves linear-
P. 6, 7. (—R.) 4. lanceolate, the lower elliptical, with revolute margins, and winged petioles.—Mountain fields.
5. P. *Bistórta.* Spike racemose, solitary, dense, without viviparous buds;
P. 6. (—R.) 17. leaves ovate, waved, the lower ones tapering into a wingless petiole.—Moist meadows.
‡ Stem branched, procumbent; ochreæ 2-lobed; fl's 4, axillary; root fibrous; leaves elliptical lanceolate.
6. P. *aviculáre.* Ochreæ shorter than internodes, about 6-ribbed; stem her-
A. 5-9. (—R.) 20. baceous; fruit shorter than cal., striated.—Waste places.

7. P. *Ráii.* Ochreæ shorter than internodes, with a few indistinct ribs;
A. 8, 9. (—R.) 6. ? stem herbaceous; fruit longer than cal., smooth, shining.—Shores.

8. P. *maritimum.* Ochreæ as long as internodes, with about 12 branched
A. 8, 9. (—R.) E. I.-2. ribs; stem woody below; fruit longer than cal., smooth, shining; leaves fleshy, glaucous.—Christ-church Head. Killiney Bay.

* Stigmas 2; fruit compressed, 2-edged; ochreæ cylindrical.

† Stam. 5; spike dense, solitary, oblong-ovate; styles 2, united in the lower half.

9. P. *amphíbium.* Leaves stalked, ovate-lanceolate, or oblong, rough at the
P. 7, 8. (R.) 20. margins, smooth on the surface.—Ponds.

β. *terréstre.* leaves narrow, lanceolate, hispid on both sides.

† Stam. 6.

‡ Spikes drooping, interrupted, filiform; styles ½-united; stem erect.

10. P. *Hydrópiper.* Fl's glandular; leaves lanceolate, waved; ochreæ gla-
A. 8, 9. (R.) 20. brous, with short ciliæ.—Wet places.

11. P. *míte.* Fl's without glands; leaves lanceolate, slightly wavy;
A. 8. (R.) E.-? ochreæ hairy, with long ciliæ.—Wet places, Chelsea. Cambridge.

‡ Spikes erect.

§ Styles combined in their whole length.

12. P. *mínus.* Spikes filiform, lax; leaves linear-lanceolate, plane, shortly
A. 9. (—R.) 1. stalked; ochreæ with long ciliæ.—Wet commons.

§ Styles distinct, or half united.

13. P. *lapathifólium.* Styles distinct; ochreæ not fringed; leaves ovate-lanceo-
A. 7, 8. (r—G.) 20. late, shortly stalked, not spotted; ped. and cal. glandular-scabrous.—Fields.

β. *nodósum.* stem with tumid joints; spikes in pairs.

14. P. *Persicária.* Styles half-united; ochreæ strongly fringed; leaves lan-
A. 8. (—R.) 20. ceolate, plane, often with a dark spot; ped. and cal. smooth.—Waste ground.

β. *incánum.* leaves woolly beneath.

γ. *láxum.* ped. and petioles glandular-scabrous.

2. RU'MEX. *L.* Dock. Sorrel.

Cal. 6-parted, the inner larger segments connivent. Stam. 6. Styles 3; stigmas multifid. Fruit triquetrous, covered by the enlarged, inner segments of cal., which often bear tubercles.

* Flowers perfect. Plants not acid.

† Margin of inner sep. toothed, mostly with an acute point.

‡ Leaves linear-lanceolate, each sep. with tubercles externally.

1. R. *maritimus.* Sep. deltoid, with 2 (4, *Sm.*) long, bristly teeth at each
P. 7, 8. (+Y.) 10. side; whorls crowded, many-fl'd, leafy.—Marshes.

2. R. *palústris.* Sep. ovate-oblong, with 3 setaceous teeth on each side;
P. 7-9. (g. Y.) E.-5. whorls distant, many-fl'd, leafy.—Marshes.

‡ Leaves broad, obtuse; one sep. only tuberculated.

3. R. *púlcher.* Lower leaves fiddle-shaped; sep. ovate, deeply toothed,
P. 8, 9. (—G.) 10. point short, acute; whorls leafy.—Dry places.

4. R. *obtusifólius.* Lower leaves cordate-ovate; sep. ovate, toothed below,
P. 7-9. (—G.) 20. with a long point; whorls leafless.—Waste ground.

† Margin of inner sep. entire, or obscurely toothed, obtuse at apex.
‡ [1] Tubercles 0 on sep., which are broadly cordate and reticulated.

5. R. *aquáticus.* Leaves lanceolate, the lower ones cordate-ovate, crisped,
P. 7, 8. (—G.) E. S.-1. wavy; whorls mostly leafless.—Wet places, York, Ayr.

‡ [2] One sep. only with a tubercle,

6. R. *crispus.* all cordate and equal; leaves lanceolate, acute, waved,
P. 6-8. (—G.) 20. crisped; whorls crowded, leafless.—Way-sides.

7. R. *sanguíneus.* Sep. oblong, obtuse; leaves lanceolate, somewhat cordate,
P. 7. (—G.) 8. with red ribs; whorls distant, leafless.—Woody places.

β. *viridis.* 18. ribs of leaves green.

‡ [3] Each sep. with a tubercle.

8. R. *acútus.* Lower leaves cordate at base, all oblong, acuminate; inner
P. 7. (—G.) 15. sep. linear-oblong, nearly entire; clusters leafy.—Wet places.

9. R. *Hydrolápathum.* Leaves lanceolate, tapering into a petiole; inner sep. ovate-
P. 7, 8. (—G.) 16. deltoid, entire; whorls crowded, mostly leafless.—River sides.

β. *máximus.* lower leaves with a cordate base.

* Flowers diclinous; inner sep. entire, or nearly so.
† Monœcious; juice not acid.

10. R. *alpínus.** Inner sep. cordate, margin nearly entire, one only bearing
P. 7. (—G.) E. S.-3. a small tubercle; leaves broadly cordate, upper ovate.

† Diœcious; juice acid.—Sorrel.

11. R. *acetósa.* Outer sep. reflexed, inner roundish-cordate, minutely tu-
P. 5, 6. (—P.) 20. berculated at base; leaves oblong-sagittate.—Meadows.

12. R. *Acetosélla.* Outer sep. ascending, inner ovate, not tuberculated; leaves
P. 7. (—R.) 20. lanceolate-hastate or linear, lobes entire.—Meadows.

3. OXY'RIA. *Hill.* Mountain-Sorrel.

Cal. 4-parted, 2 inner segments the larger. Stam. 6. Stigmas 2. Fruit compressed, with a broad membranous margin.

O. *reniformis.* Leaves radical, reniform, obtusely sinuated at apex; pedi-
P. 7, 8. (r. G.) 2. cels thickened upwards.—Mountains.

ORDER XXXIX.—AMARANTHEÆ.

Herbs or shrubs, having emollient qualities, with simple exstipulate leaves. Fl's in heads and spikes, often diclinous. *Sep.* 3 or 5, persistent, *scarious*, often coloured, distinct, or united at base, and *often with dry coloured bracts.* Stam. 5, or some multiple of that number, hypogynous; fil. often monadelphous; *anth. often* 1-*celled*; ov. free, 1 or *few-seeded;* style 1 or 3; stigma simple or compound. Fruit a membranous utricle. Seeds lentiform, pendulous; *embr. curved round the circumference of alb.* Rad. next hilum.

1. AMARA'NTHUS. *L.*

Monœcious. Cal. 3-5-parted. Stam. 3-5. Styles 3 or 2. Capsule 1-celled, 1-seeded, opening transversely.

1. A. *Blítum.** Fl's 3-fid.; stam. 3; clusters small, lateral, the upper
A. 8. (—G.) E.-?-2. ones in a small, naked spike; stam. spreading.—Waste places.

ORDER XL.—CHENOPODIEÆ.

Herbs, rarely shrubs, often jointed, containing many esculent vegetables, but few deleterious ones. Fl's sometimes diclinous. *Cal. deeply 5-lobed, herbaceous*, imbricated. Cor. 0. Stam. mostly 5, sometimes 2 or 1, on base of cal.; *anth.* 2-*celled. Ov. single*, (?) 1-*celled;* style divided. *Fruit* membranous, indehiscent, sometimes baccate, 1-*seeded.* Embr. encircling the alb.; or a flat spiral separating 2 masses of alb., or conically spiral without alb.; rad. turned to hilum.

* Fl's monœcious, or polygamous.	1. ATRIPLEX.
* Fl's all perfect.	
† Stem jointed. Stam. 1 or 2.	2. SALICORNIA.
† Stem not jointed. Stam. 5.	
‡ Fl's destitute of bracts.	3. CHENOPODIUM.
‡ Fl's with bracts.	
§ Ov. half adherent to tube of cal. Leaves not fleshy.	4. BETA.
§ Ov. entirely free. Leaves fleshy, spinous. Cal.-segments at length appendaged at back.	5. SALSOLA.
Leaves not spinous. Cal. not appendaged. .	6. SCHOBERIA.

Tr. I. *ATRIPLICIDÆ. Fl's monœcious, rarely perfect. Embr. curved round the alb.*

1. A'TRIPLEX. *L.* Orache.

Barren and perfect fl's:—Cal. 5-parted, free. Stam. 5. Stigmas 2. *Pistilliferous fl's:*—Sep. 2, persistent, enlarging, and covering the fruit.

* Fl's in interrupted spikes or panicles, not in sessile, axillary clusters.

† Leaves entire, or scarcely toothed.

1. A. *portulacoïdes.* *P.* 8-10. (—Y.) 8. Stem woody; leaves obovate-lanceolate, entire; cal. of fruit nearly sessile, with 3 equal lobes.—Sea-shore.

2. A. *pedunculátus.* *A.* 8, 9. (—G.) 3. Stem herbaceous, spreading; leaves obovate-lanceolate, entire; cal. of fruit on long stalks, with 1 small middle, and 2 large, lateral lobes.—Sea-coast.

3. A. *littorális.* *A.* 7-9. (—G.) 8. Stem herbaceous, erect; leaves linear-lanceolate, mostly entire; cal. of fruit spreading, ovate, sinuated.—Salt marshes.

β. *marína.* leaves ovate-lanceolate, toothed; cal. of fruit closed, obcordate-triangular.

† Lower leaves lobed or angular,

‡ [1] their lobes spreading horizontally.

4. A. *pátula.* *A.* 6-10. (y. G.) 20. Upper leaves lanceolate, almost entire, lower ovate-hastate, denticulate; fl. in simple, interrupted spikes; cal. triangular-rhomboid, nearly entire, longer than fruit.—Waste places.

β. *prostráta.* lower leaves triangular-hastate, intermediate ones with 2 ascending lobes from a cuneate base; cal. cordate-triangular, not longer than fruit.

γ. *microspérma.* lower leaves ovate-lanceolate, with 2 lobes, upper linear-subulate, hastate; cal. ovate-triangular, rather longer than fruit; fl's densely panicled.

‡ ³ Lobes of the leaves descending.

5. A. *deltoidéa.* Leaves all hastate-triangular, 2-lobed, unequally or sinnately toothed; fl's densely panicled; cal. of fruit ovate-triangular, rather longer than fruit.—Waste places.
A. 7-10. (—G.) E.-6.

‡ ³ Lower leaves with 2 ascending lobes from a cuneate base.

6. A. *angustifólia.* Fl's in simple interrupted spikes; leaves lanceolate, entire; cal. of fruit entire, smooth on back.—Waste places.
A. 7-10. (—G.) 20.

7. A. *erécta.* Fl's in branched, dense spikes; leaves ovate-lanceolate, the lower sinuated; cal. of fruit denticulate, tuberculated on back.—Waste places.
A. 8. (—G.) 20.

* Fl's, particularly in the fertile ones, in axillary, sessile clusters.

8. A. *rósea.* Leaves nearly ovate-triangular, somewhat 3-lobed, unequally sinuate-dentate; cal. of fruit rhomboidal-acute, toothed, with 2 rows of tubercles on back.—Sea-shore.
A. 7-9. (—G.) ?

9. A. *laciniáta.* Leaves mealy beneath, triangular-rhomboid, laciniated; cal. of fruit rhomboidal, with 3 lateral, truncate lobes, and 2 rows of tubercles on back.—Sea-shore.
A. 7-9. (—G.) 9.

Tr. II. *CHENOPODIDÆ. Fl's perfect. curved round the alb.*

2. SALICO'RNIA. *L.* Glass-wort.

Cal. tumid, fleshy, obscurely lobed, imbedded in the rachis. Stam. 1 or 2. Style short; stigmas bifid. Fruit a 1-seeded utricle.

1. S. *herbácea.* Stem leafy, herbaceous, its divisions compressed, thickened upwards; spikes cylindrical, slightly taper at end.—Salt marshes.
A. 8, 9. (G.) 12.

β. *procumbens.* stem procumbent.

2. S. *radícans.* Stem leafless, woody, procumbent, rooting, its divisions compressed, cylindrical; spikes oblong, obtuse.—Salt marshes.
A. 8, 9. (G.) E. I.-1.

3. CHENOPO'DIUM. *L.* Goose-foot.

Cal. 5-cleft, persistent, unaltered. Stam. 5, hypogynous. Stigmas 2-3. Pericarp thin, free. Seed lenticular.

* Leaves toothed, angled, or lobed.

† Leaves green on both sides,

‡ triangular.

1. C. *Bonus-Henricus.* Leaves sagittate at base, entire; fl's in compound, terminal, leafless spikes; seeds smooth.—Waste places.
P. 8. (—G.) 20.

2. C. *úrbicum.* Leaves straight at base, shortly toothed; fl's in compound, erect, nearly leafless spikes; seeds minutely rough.—Waste places.
A. 8. (—G.) 11.

β. *intermédium.* leaves with longer, more acute teeth.

‡ Leaves not triangular. Spikes much branched, divaricating, cymose, leafless.

3. C. *murále.* Leaves ovate, somewhat rhomboid, unequally and sharply toothed, entire towards base.—Waste ground.
A. 8. (—G.) 13.

4. C. *hýbridum.* Leaves cordate, angled, toothed, acuminate, teeth large, distant.—Cultivated and waste places.
A. 8. (—G.) 7.

† Leaves glaucous, white or mealy beneath.

‡ Upper leaves quite entire, oblong or lanceolate; stam. 5.

5. C. *álbum.* Leaves ovate-rhomboid, sinuately toothed, entire at base;
A. 7, 8. (—G.) 20. fl's in branched, nearly leafless racemes.—Waste places.
β. víride. racemes interrupted; leaves green, more entire.

6. C. *ficifólium.* Leaves ovate-oblong, sinuate, somewhat hastate; fl's in
A. 8, 9. (—G.) 5. erect, nearly leafless, cymose racemes.—Waste ground.

‡ Upper leaves toothed or serrated; stam. 1-2, or 3.

7. C. *rúbrum.* Leaves triangular, somewhat rhomboid, toothed, and ser-
A. 8, 9. (—G.) 17. rated; cal. 3 or 4, rarely 5-cleft; spikes erect, compound, leafy.—Near the sea.
β. botryódes. leaves triangular, scarcely toothed.

8. C. *glaúcum.* Leaves oblong, sinuately toothed; cal. 3-cleft; spikes
A. 9. (—G.) E.-1. nearly simple, leafless.—Waste, sandy ground.

* Leaves entire,

9. C. *polyspérmum.* sessile, ovate-elliptical; fl's in axillary, leafless, cymose
A. 8, 9. (—G.) 10. racemes, or spikes.—Moist places.
β. acutifólium. leaves acute; stem erect; fl's spicate.

10. C. *ólidum.* Leaves petiolate, ovate-rhomboid, mealy, fœtid; fl's in
A. 8, 9. (—G.) 9. dense, leafless, clustered racemes; stem diffuse.—Near the sea.

4. BE'TA. *L.* Beet.

Cal. 5-cleft, persistent, half inferior. Styles 2-3. Stam. 5, from a perigynous ring. Seed 1, immersed in fleshy base of cal.

1. B. *marítima.* Stems procumbent at base; fl's mostly in pairs; leaves
P. 7-9. (—G.) 7. ovate-cuneate; cal.-segments entire.—Sea-shores.

Tr. III. *SALSOLIDÆ. Fl's perfect. Embr. spiral; alb.* 0.

5. SA'LSOLA. *L.* Salt-wort.

Cal. 5-parted, persistent, enveloping the fruit with its base; its segments, at length, bearing a transverse, dorsal appendage. Stam. 5. Style 2. Fruit a 1-celled utricle. Testa crustaceous.

1. S. *Kóli.* Stem herbaceous, prostrate; leaves fleshy, subulate, spi-
A. 7. (—G.) 10. nous-pointed, rough; fl's axillary, solitary.—Sea-shore.

6. SCHOBE'RIA. *C. A. Meyer.*

Cal. 5-parted, without appendages. Stam. 5. Styles 2. Fruit a membranous utricle. Testa membranous.

1. C. *fruticósa.* Stem erect, shrubby; leaves ½-cylindrical, obtuse; styles
P. 6, 8. (—G.) E.-2. 3; fl. axillary, solitary, or clustered.—Sea-coast.

2. C. *maritima.* Stem herbaceous; leaves ½-cylindrical, tapering, acute;
A. 7-9. (—G.) 12. styles 2; fl's axillary, solitary, or in pairs.—Sea-shore.

ORDER XLI.—SCELERANTHEÆ.

Inconspicuous, unimportant herbs, with opposite exstipulate leaves. Fl. axillary, sessile. *Cal.* 4 or 5-toothed, its *limb indurated, at length enclosing the fruit, bearing* 1-10 *stam.* *Cor.* 0. *Ov.* 1-*celled*, 1-*seeded;* styles 2, or 1 and emarginate. *Ovules* 1 or 2, hanging from a funiculus, which rises *from base of cell.* *Embr.* cylindrical, *curved round a farinaceous alb.*; rad. superior, next hilum.

1. SOLERA'NTHUS. *L.* Knawel.

Cal. urceolate, 5-cleft. Stam. 10, 5 frequently abortive, or wanting. Styles 2. Fruit membranous, 1-seeded, covered by cal.

1. S. *ánnuus.* *A.* 7. (—G.) 20. Cal.-segments acute, patent in fruit, with a narrow, membranous border; stems branching, spreading.—Sandy fields.

2. S. *perénnis.* *P.* 6-8. (—G.) E. S.-2. Cal.-segments obtuse, connivent in fruit, with a broad, membranous margin; stems nearly simple, procumbent. —Norfolk. Suffolk. Forfar.

ORDER XLII.—BERBERIDEÆ.

Mostly spinose shrubs, with alternate compound, exstipulate leaves, and acid astringent properties. Sep. 3-4-6, in a double row, surrounded by petaloid bracts. Pet. and *stam. as many as sep., and opposite to them and each other.* Anth. 2-celled, opening by an upwardly curved valve. *Ov. of* 1 *carpel, free.* Fruit fleshy, or dry. Seeds few; *embr. in axis of fleshy alb.*

Sep. and pet. 6.	1. BERBERIS.
Sep. and pet. 4.	2. EPIMEDIUM.

1. BE'RBERIS. *L.* Barberry.

Sep. 6, deciduous. Pet. 6, each with 2 glands at base. Fruit fleshy, 2-seeded.

1. B. *vulgáris.* *S.* 5, 6. (Y.) 17. Racemes pendulous; spines 3-forked; leaves obovate, ciliated, serrate; pet. entire.—Thickets.

2. EPIME'DIUM. *L.* Barren-wort.

Sep. 4, deciduous. Pet. 4, each with a cup-shaped scale at base. Fruit a many-seeded pod.

1. E. *alpínum.** *P.* 5. (R.) E. S.-1. Fl. panicled; leaves of stem twice ternate, leafl. cordate, serrate.—Woods, Yorkshire, Cumberland, Edinburgh.

ORDER XLIII.—RANUNCULEÆ.

Herbs, rarely shrubs, with alternate, rarely opposite, generally divided leaves, the petiole dilated into a half-clasping sheath at base. Sep. 3-15, often coloured and petaloid. *Pet.* 5-15, often deformed, sometimes wanting. *Stam.* hypogynous, *mostly indefinite;* anth. adnate. *Carpels numerous, free.* Fruit of dry akenia, or follicles, or baccate with 1 or more seeds. *Embr. minute, in a large, horny alb.*

* Pet. 0, or much smaller than the equal, mostly petaloid sep.
  † Carpels numerous, more than 10.
    ‡ Leaves opposite. Stem climbing. . . . 1. CLEMATIS.
    ‡ Leaves alternate, or radical. Stem not climbing.
      § Carpels 1-seeded.
        Invol. of 3, cut leaves beneath the fl. . . 3. ANEMONE.
        Invol. 0. . . . . 2. THALICTRUM.
      § Carpels more than 1-seeded.
        Sep. generally in more than 1 row. Pet. small, linear, flat. . . . . } 8. TROLLIUS.
        Sep. in 1 row. Pet. small, tubular, 2-lipped, with a long claw. . . . . } 9. ERANTHIS.
  † Carpels 3-10. Sep. 5, petaloid.
    Pet. 0. Sep. deciduous. . . . . 7. CALTHA.
    Pet. small, tubular, 2-lipped, clawed. . . . 10. HELLEBORUS.
* Pet. as large as, or larger than sep.; if smaller, the sep. are unequal.
  † All or some of the pet. deformed, having a horn-like spur beyond the base.
    Sep. equal, not spurred. . . . . 11. AQUILEGIA.
    The upper sep. elongated into a hollow spur at base. . 12. DELPHINIUM.
    The upper sep. helmet-shaped, concealing 2 pet. . . 13. ACONITUM.
  † All the sep. and pet. uniform, not horned at the base.
    ‡ Carpels numerous, 1-seeded, indehiscent.
      Pet. with a scale or pore at base. Carpels in a globose head. . . . . } 6. RANUNCULUS.
      Pet. with a long, tubular claw. Carpels on a long, filiform receptacle. . . . . } 5. MYOSURUS.
      Pet. without either a pore, scale, or tube. Carpels in a short spike. . . . . } 4. ADONIS.
    ‡ Carpels 1 or 2-5, many-seeded.
      Sep. 5, persistent. Pet. 5 or more. . . . 14. PÆONIA.
      Sep. 4, deciduous. Pet. 4. . . . . 15. ACTÆA.

Tr. I. *CLEMATIDÆ. Cal. valvate, or induplicate. Anth. extrorse.*

1. CLE'MATIS. *L.* Traveller's-joy.

Sep. 4-6. Pet. 0. Akenia terminated by a long, feathered tail.

1. C. *vitálba.* Leaves pinnate, leafl. cordate-ovate, inciso-lobate, petioles
S. 6. (g. W.) 10. twining; sep. downy.—Hedges.

Tr. II. *ANEMONIDÆ. Cal. imbricate, seed inverted. Anth. extrorse.*

2. THALI'CTRUM. *L.* Meadow-rue.

Sep. 4 or 5. Cor. 0. Akenia without a tail.

* Stem simple, nearly leafless. Raceme simple; terminal, fl. drooping.
1. T. *alpinum.* Leaves on long stalks, bi-ternate; fruit-stalks reflexed;
P. 6. (—Y.) 3. carpels on short stalks, curved at end.—Mountains.
* Stem branched, rather leafy; fl's panicled.
2. T. *minus.* Leaves 3 or 4-pinnate, leafl. roundish, smooth, 3-fid, toothed,
P. 6, 7. (Y.) 10. glaucous beneath; panicle diffuse, its branches alternate, or whorled; fl. drooping; stip. rounded.—Sand-hills.
β. május. segments of leaves acuminate; stip. crescent-shaped.
3. T. *flávum.* Leaves 2-pinnate; leafl. broadly ovate, 3-fid; panicle com-
P. 6, 7. (Y.) 17. pact, corymbose; fl's erect.—Wet places.

3. ANE'MONE. *L.*

Sep. 5-9, petaloid, with an invol. of 3 divided leaves. Pet. 0. Akenia placed on a thickened receptacle, sometimes tipped with the feathery styles.

* Invol. in deep, linear segments; carpels with bearded tails.

1. A. *Pulsatílla.* *P.* 4, 5. (P.) E.-3. Fl. solitary; sep. 6; invol. sessile; leaves bi-pinnate, leafl. pinnatifid, segments linear.—Chalky pastures.

* Invol. in broader lobes or segments; carpels without tails.

2. A. *ranunculoídes.** *P.* 4. (Y.) E.-1. Fl. solitary, or in pairs; sep. 5, elliptical; invol. of 3, sessile, ternate, deeply cut leafl.; leaves similar.—Woods, Herts, Kent.

3. A. *nemoróſa.* *P.* 3-5. (W. *v.* P.) 19. Fl. solitary; sep. 6, elliptical; invol. and leaves of 3, ternate or quinate, stalked leaves, with lobed and cut leafl.—Woods.

4. A. *Apennína.** *P.* 4. (—B.) E.-1. Fl. solitary; sep. 12-14, lanceolate; invol. and leaves of 3, ternate, stalked, deeply cut leafl.

4. ADO'NIS. *L.* Pheasant's-eye.

Sep. 5. Pet. 5-10, without a nectary. Akenia without tails.

1. A. *autumnális.** *A.* 9, 10. (S.) 6. Pet. concave, connivent, scarcely longer than the glabrous cal.; leaves 3-pinnatifid, segments linear.—In corn.

5. MYOSU'RUS. *L.* Mouse-tail.

Sep. 5, prolonged into a spur at base. Pet. 5, with a filiform, tubular claw. Akenia numerous, placed upon a very long, filiform receptacle.

M. *mínimus.* *A.* 5, 6. (Y.) E.-10. I.-1. Stem simple, leafless, 1-fl'd, as long as or longer than leaves; spurs of cal. leafy.—Damp fields.

Tr. III. *RANUNCULIDÆ. Cal. imbricate. Akenia* 1-*seeded, without tails. Seed erect. Anth. extrorse.*

6. RANU'NCULUS. *L.* Crow-foot. Butter-cup. Spear-wort.

Sep. 5, rarely 3. Pet. 5, rarely more, with a nectariferous scale or pore at the base. Carpels pointed, in a globular head.

* Leaves more or less divided or lobed.

† Pet. with a small scale at base.

‡ Cal. reflexed; stem erect, hairy, many-fl'd; ped. furrowed.

1. R. *bulbósus.* *P.* 5. (Y.) 20. Stem bulbous as base; leaves divided into 3, stalked leafl., which are 3-lobed, or 3-fid and cut; carpels smooth.—Meadows.

2. R. *hirsútus.* *A.* 6-8. (Y.) E. S.-16. Stem not bulbous; leaves 3-lobed, or 3-parted; lobes obtuse, cut; carpels margined, tubercular.—Meadows.

β. *párvulus.* smaller in all its parts.

‡ Cal. spreading,

§ Carpels rough.

3. R. *parviflórus.* *A.* 5, 6. (Y.) E. I.-11. Stem prostrate; ped. opposite leaves; leaves roundish-cordate, 3-5-lobed, sharply cut, upper oblong, entire, or 3-lobed; carpels muricated.—Dry places.

4. R. *arvénsis.* *A.* 6. (Y.) 17. Stem erect; ped. axillary; leaves 3-cleft, toothed, those of stem once or twice ternate, with linear, lanceolate segments; carpels spinous, beaked.—Corn-fields.

§ Carpels smooth.

5. R. *répens.* Stem with creeping scions; ped. furrowed, with spreading
P. 6-8. (Y.) 20. hairs; leaves of 3, stalked, 3-lobed or parted, cut leafl.—Pastures.

6. R. *ácris.* Stem erect; scions 0; ped. not furrowed, with adpressed
P. 6, 7. (Y.) 20. hairs; leaves palmately 3-5-parted, with linear segments.—Pastures.

† Pet. having a minute pore at base, without a scale.

‡ Stem erect, not floating; carpels not rugose or tubercular.

7. R. *alpéstris.* Stem 1-fl'd; leaves smooth, those of root somewhat cor-
P. 5. (W.) S.-1. date, deeply 3-5-lobed, crenate at end, those of stem linear or trifid.—Moist rocks, Clova Mountains.

8. R. *auricómus.* Stem many-fl'd; leaves smooth, those of the root reni-
P. 4, 5. (Y.) 18. form, 3-parted, cut, those of stem in linear segments; cal. pubescent, shorter than pet.; carpels in a globose head.—Woods.

9. R. *scelerátus.* Stem many-fl'd; leaves smooth, those of root 3-parted;
A. 6-9. (Y.) 20. lobes cut, very obtuse, upper stem-leaves in 3, linear, cut segments; cal. glabrous; carpels in an oblong head.—Ditches.

‡ Stem creeping or floating; carpels transversely wrinkled.

10. R. *hederáceus.* Creeping; leaves roundish-reniform, with 3-5, rounded, en-
P. 5-9. (W.) 20. tire lobes; stam. 5-10.—Wet places.
β. *pártitus.* lobes of leaves notched; stip. very broad, adnate to petiole; pet. longer and larger.

11. R. *aquátilis.* Floating; sub-mersed leaves capillary, the floating ones
L. 5, 6. (W.) 20. 3-5 parted, all more or less stalked.—Ponds, ditches.
β. *pantóthrix.* leaves all multifid and setaceous.
γ. *flúitans.* leaves multifid, with very long, parallel segments.
δ. *circinátus.* leaves multifid, with rigid, capillary, radiating segments.

* Leaves neither divided nor lobed,

† the lower ones cordate, petiolate.

12. R. *ophioglossifólius.* Stem erect, many-fl'd, bearing oblong, sessile leaves; scale
A. 6. (Y.) C. of pet. entire.—St. Peter's Marsh, Jersey.

13. R. *Ficária.* Stem erect, 1-fl'd; scale of pet. notched, all the leaves cor-
P. 4, 5. (Y.) 20. date, angular; sep. 3; pet. 8 or 9.—Moist places.

† None of the leaves cordate,

14. R. *Lingua.* but lanceolate-acute, sub-serrate, sessile, half-clasping;
P. 6, 7 (Y.) 15. stem erect, many-fl'd.—Wet places.

15. R. *Flámmula.* Leaves ovate, lanceolate, bluntish, nearly entire, stalked;
P. 5-8. (Y.) 20. stem reclining at base.—Wet places.
β. *réptans.* leaves linear; stem procumbent, filiform.

Tr. IV. *HELLEBORIDÆ. Cal. imbricate in æstivation. Follicles many-seeded. Anth. extrorse.*

7. CA'LTHA. *L.* Marsh-marigold.

Sep. 5, petaloid. Pet. 0. Follicles 5-10.

1. C. *palústris.* Leaves roundish, cordate, crenate; stem ascending; cal.
P. 3, 4. (Y.) 20. of 5-6 oval leaves.—Marshy places.
β. *minor.* smaller; stem 1-fl'd; leaves more deeply cordate.

γ. rádicans. stem creeping; leaves cordate-triangular, crenate.

8. TRO'LLIUS. *L.* Globe-flower.

Sep. 5-15, petaloid, deciduous. Pet. 5-10, small, linear, flat, clawed. Follicles numerous.

1. T. *Europæ'us.* Sep. 10-15, converging into a globe; pet. 5-10, nearly as
P. 6, 7. (Y.) 10. long as stam.; leaves 5-parted.—Shady places.

9. ERA'NTHIS. *Salisb.* Winter-aconite.

Sep. 5-8, petaloid, deciduous. Pet. small, tubular, 1-lipped, with a long claw. Follicles numerous, stalked.

1. E. *hyemális.** Sep. 6-8, oblong; root-leaves long stalked, 5-7-parted,
P. 2, 3. (Y.) E. S.-1. deeply cut into linear, oblong segments.—Thickets.

10. HELLE'BORUS. *L.* Hellebore.

Sep. 5, persistent. Pet. small, tubular, 2-lipped, clawed. Follicles 3-10, sessile.

1. H. *fœtidus.** Leaves pedate; sep. converging; stem many-fl'd, leafy,
P. 3, 4. (—G.) E. S.-12. upper becoming ovate bracts.—Thickets.
2. H. *viridis.** Leaves digitate, stalked, upper sessile at the branches;
P. 3, 4. (g. Y.) 11. sep. spreading.—Thickets.

11. AQUILE'GIA. *L.* Columbine.

Sep. 5, deciduous, petaloid. Pet. 5, terminating below in a horn-shaped spur. Follicles 5.

1. A. *vulgáris.* Spurs of pet. incurved; stem leafy, many-fl'd; styles as
P. 6. (P.) 15. long as stam.; follicles hairy.—Woods.

12. DELPHI'NIUM. *L.* Larkspur.

Sep. 5, petaloid, deciduous, unequal, the upper one produced at the base into a spur Pet. 4, the 2 upper spurred and included in the spurred sep. Follicles 1, 3 or 5.

1. D. *consólida.** Stem erect, branched, nearly smooth; racemes lax; pet.
A. 6, 7. (B. R. W.) E. S.-5. combined; spur longer than cal.—Dry places.

13. ACONI'TUM. *L.* Wolf's-bane. Monk's-hood.

Sep. 5, petaloid, unequal, the upper one helmet-shaped; the upper pet. tubular, deformed, on long stalks, and concealed within the helmet-shaped sep.

1. A. *Napéllus.** Upper sep. arched at back; spurs of nectaries nearly coni-
P. 6, 7. (B.) E. S.-3. cal, bent down; leaves with cuneate, pinnatifid lobes young carpels diverging.—River-banks.

14. PÆ'ONIA. *L.* Pæony.

Sep. 5, persistent. Pet. 5-10, concave. Anth. extrorse. Follicles 2-5, many-seeded, bursting inwards, crowned with the bi-laminated stigma.

1. P. *corallína.** Leaves bi-ternate, glabrous; segments, ovate, entire; fol-
P. 5, 6. (+R.) E.-1. licles downy, recurved.—Steep Holmes Isle, in Severn.

Tr. V. *ACTÆIDÆ. Cal. coloured, imbricated. Fruit succulent, indehiscent,* 1 *or many-seeded.*

15. ACTÆ'A. *L.* Bane-berry.

Sep. 4, petaloid, deciduous. Pet. 4. Anth. extrorse. Ov. of 1 carpel, which becomes a fleshy, indehiscent, many-seeded pericarp.

1. A. *spicáta.* Raceme simple, elongated; pet. as long as stam.; fruit
P. 5. (W.) E. S.-2. oval, on slender pedicels.—Bushy places.

ORDER XLIV.—NYMPHÆEÆ.

Aquatic herbs, with fleshy, simple leaves, and unimportant qualities. Sep. gradually passing into pet., arranged in several rows, and again insensibly passing into *stam.*, which are *indefinite*, and inserted with the pet. into a disk surrounding the ovary. Anth. adnate, opening longitudinally by a double cleft. *Ov. many-celled*, many-seeded, crowned by the radiating stigmas, which alternate with *the dissepiments bearing the placentæ.* Fruit indehiscent. Seeds surrounded by a gelatinous arillus; *embr.* small on the *outside of the base of a farinaceous alb.*, and enveloped in a membranous bag.

Cal. of 4 sep.	1. NYMPHÆA.
Cal. of 5 or 6 sep.	2. NUPHAR.

1. NYMPHÆ'A. *L.* White Water-lily.

Sep. 4. Pet. numerous, inserted with the stam., on a fleshy disk surrounding the ov. Fruit a many-celled, many-seeded berry.

1. N. *álba.* Leaves orbicular, deeply cordate, entire, the basal lobes
P. 7. (W.) 19. approximating; stig. of 12-20 rays.—Still water.

β. *minor.* a small variety.

2. NUPHAR. *Sm.* Yellow Water-lily.

Sep. 5. Pet. numerous, inserted with the stam. on the receptacle. Fruit a many-celled, many-seeded berry.

1. N. *lútea.* Stigma with an entire margin, of 14-20 rays; leaves ob-
P. 7. (Y.) 19. long-cordate; anth. linear, oblong.—Lakes.
2. N. *púmila.* Stigma with 8-10 rays, forming a toothed margin; leaves
P. 7, 8. (Y.) E. S.-2. ovate, deeply cordate, with distant lobes; anth. short.—Mountain lakes.

ORDER XLV.—PAPAVEREÆ.

Herbs, rarely shrubs, with an opaque, narcotic juice. Leaves alternate, simple, or divided, exstipulate. Ped. 1-fl'd. *Sep.* 2, *deciduous.* Pet. 4, rarely 8 or 12, crumpled before expansion. *Stam. indef.*, in 4 parcels, each adherent to base of one of the pet.; anth. 2-celled, innate. *Ov.* 1-*celled, with parietal placentæ;* stigmas as many as, and alternate with the placentæ, when numerous radiating. Seeds indefinite, innocuous; *embr. minute*, straight, *at base, of a fleshy or oily alb.*

* Fruit globose, or ovate, 1-celled.	
Stigmas 4-10, cohering so as to form a disk. Juice white. .	1. PAPAVER.
Stigmas 4-6, partially cohering. Juice yellow. . .	2. MECONOPSIS.
* Fruit linear. Juice yellow.	
Fruit 2-celled, 2-valved.	3. GLAUCIUM.
Fruit 1-celled, opening by 2-4 valves from top to bottom. .	4. RŒMERIA.
Fruit 1-celled, opening by 2 valves from bottom to top. .	5. CHELIDONIUM.

1. PAPA'VER. *L.* Poppy.

Style 0; stigma of 4-20 cohering rays. Caps. obovate, with parietal placentæ projecting far into its cavity, opening by pores beneath the stigma.

* Caps. hispid; fil. clavate; leaves bi-pinnatifid.

1. P. *Argémone.* Caps. clavate, ribbed, with spreading bristles; cal. hairy;
A. 6, 7. (y. R.) 17. stem leafy, many-fl'd.—Corn-fields.
β. *maritimum.* stem 1-fl'd.
2. P. *hýbridum.* Caps. ovate, nearly globose, furrowed, with spreading
A. 6, 7. (+R.) E. I.-8. bristles; cal. bristly; stem as last.—Sand-fields.

* Caps. smooth.

† Fil. subulate; stem and cal. hairy or bristly.

3. P. *dúbium.* Bristles of ped. appressed; leaves pinnatifid, cut unequally;
A. 6, 7. (y. R.) 20. stigmas 4-6-rayed; caps. clavate, angular.—Corn-fields.
4. P. *Rhœ'as.* Bristles of ped. spreading; leaves pinnatifid, cut equally;
A. 6, 7. (y. R.) 19. stigma many-rayed; caps. obovate.—Corn-fields.
β. *strigósum.* ped. rough, with appressed hairs.

† Fil. clavate; stem and cal. smooth.

5. P. *somníferum.** Capsule globose; leaves smooth, glaucous, unequally
A. 7. (W. * P.) 3. toothed, clasping at base.—Sandy soil.

2. MECONO'PSIS. *Vignier.* Welsh-poppy.

Styles short. Stigmas 5 or 6, partially cohering. Caps. obovate, with scarcely projecting placentæ, opening with 5 or 6 small, valvular pores beneath stigma.

1. M. *Cámbrica.* Capsule glabrous; leaves mostly petiolate, pinnate, cut.—
P. 6. (Y.) 3. Shady and rocky places.

3. GLAU'CIUM. *Tourn.* Horned-poppy.

1. G. *lúteum.* Leaves clasping, wavy, sinuate, glaucous; pod minutely
B. 6-8. (Y.) 9. tuberculous.—Sea-shores.

4. RŒME'RIA. *De C.*

Stigmas 2-4, sessile. Caps. linear, 1-celled, 2-4-valved.

1. R. *hýbrida.** Pods 3-4-valved, erect, with rigid bristles at the apex;
A. 5, 6. (Y.) 1. leaves bi-pinnatifid, with linear, smooth, bristle-pointed segments.—Corn-fields.

5. CHELIDO'NIUM. *L.* Celadine.

Stigma 2-lobed. Caps. linear, 1-celled, 2-valved. Seeds crested.

1. C. *május.* Ped. umbellate; leaves deeply pinnatifid, segments rounded,
P. 5-8. (Y.) 18. and bluntly lobed.—Old walls.
β. *laciniátum.* segments of leaves deeply pinnatifid, lobed, inciso-serrate; pet. jagged.

ORDER XLVI.—FUMARIEÆ.

Herbs with a colourless juice, and bitter, astringent, or acrid qualities. Leaves mostly alternate, multifid, often with tendrils. Sep. 2, deciduous. *Cor. irregular*, of 4 parallel pet. *Stam.* 4, distinct, or 6, in 2 parcels *opposite the outer pet.*; lateral stam. in each parcel 1-celled, the middle 2-celled. *Ov.* 1-*celled;* stigma with 2 or more points. Fruit dry or fleshy, 1 or more-seeded; placentæ parietal. Seeds horizontal, crested, or arillate; *alb. fleshy;* embr. minute, abaxile, straight in the indehiscent fruit, curved in those which open.

Seeds numerous.	1. CORYDALIS.
Seed single.	2. FUMARIA.

1. CORY'DALIS. *De C.*

Pod. 2-valved, many-seeded, compressed. Sep. 2. Pet. 4, the upper one spurred at base. Stam. diadelphous.

1. C. *claviculáta.* *A.* 6, 7. (W.) 14. — Bracts oblong, acuminate; root fibrous; leaves pinnate, pinnæ ternate; petioles ending in tendrils. — Bushy places.
2. C. *lútea.** *P.* 5-8. (Y.) E. S.-4. — Bracts minute, oblong, cuspidate; root fibrous; leaves bi-pinnate, leafl. cut or trifid; tendrils 0.—Walls.
3. C. *sólida.** *P.* 4, 5. (—P.) E. S.-3. — Bracts palmate; root solid; leaves bi-ternate, cut, lowest petiole a leafless scale.—Thickets.

2. FUMA'RIA. *L.* Fumitory.

Fruit indehiscent, 1-seeded, style deciduous. In other respects as *Cordyalis.*

* Sep. as broad as, or broader than cor.,
† ovate, acute, toothed or cut.

1. F. *capreoláta.* *A.* 5-8. (P.) 17. — Stem mostly climbing; bracts shorter than fruit-stalks; fruit globose, emarginate; leafl. broad. — Cultivated ground.
2. F. *parviflóra.* *A.* 8, 9. (—R.) E. S.-3. — Stem erect; bracts as long as fruit-stalks; fruit globose, pointed; leafl. linear, channelled.—Kent. Edinburgh.
† Sep. orbicular; bracts longer than fruit-stalks.
3. F. *micrántha.* *A.* 6-9. (—P.) E. S.-4. — Fruit globose, slightly pointed; cor. twice the length of bracts; leaves in numerous, linear segments.
* Sep. not so broad as cor.,
4. *officinális.* *A.* 5-9. (R.) 20. — ovate-lanceolate, broader than pedicel, ⅔ shorter than cor.; bracts ⅔ the length of pedicel; stem erect.—Dry places.
β. scan'dens. sep. nearly as long as cor.; stem climbing.
5. F. *Vaillántii.* *A.* 6-9. (—P. *v.* W.) 15. — Sep. minute, much shorter than cor.; bracts as long as pedicels; stem slender, spreading; leafl. in capillary segments.

ORDER XLVII.—DROSEREÆ.

Herbs often covered with glands or hairs. Leaves alternate or radical, with fringed stip., and a circinate vernation, possessing acid and acrid qualities. Ped. circinate when young. *Fl's regular.* Sep. and pet. 5. *Stam* free, 1, 2, 3, or 4 *times as many as, and alternate with pet.* Ov. single; styles 3-5. *Capsule* 3-5 *valved, with parietal placentæ.* Seeds indefinite, sometimes with an arillus. *Embr.* minute, *in* the base of *fleshy alb.*

1. DRO'SERA. *L.* Sun-dew.

Cal. 5-cleft. Pet. 5. Stam. 5-10. Styles 3 or 5. Leaves covered with numerous glandular hairs.

1. D. *A'nglica.* *P.* 7, 8. (+W.) 9. Leaves radical, linear-spathulate, erect, on long, glabrous petioles; ped. erect; seeds with a loose, chaffy coat.—Bogs.
2. D. *intermédia.* *P.* 7, 8. (+W.) 10. Leaves radical, spathulate, erect, on long glabrous petioles; ped. arcuate, or decumbent at base; seeds with a close, rough, chaffy coat.—Boggy places.
3. D. *rotundifólia.* *P.* 7, 8. (W.) 19. Leaves radical, orbicular, spreading; petioles hairy; ped. erect; seeds with a loose, chaffy coat.—Bogs.

ORDER XLVIII.—CISTINEÆ.

Shrubs, or herbs, with entire leaves, possessing no marked qualities. Fl's very fugacious Sep. 3-5, 2 outer sometimes wanting, 3 inner with a twisted æstivation. *Pet.* 5, *rarely* 3, corrugated in æstivation, and twisted in a direction contrary to that of sep. *Stam. generally indef.* Ov. 1 or spuriously many-celled; style and stigma simple. Fruit capsular, 3, 5 or 10-valved. *Placentæ parietal.* Seeds generally indefinite; *embr.* inverted, *spiral or curved in the midst of a small, mealy, or horny alb.*

1. HELIA'NTHEMUM. *Tourn.* Rockrose.

Sep. 5, the 2 exterior smaller or wanting. Pet. 5, deciduous. Stam. numerous. Capsule 3-valved.

* Leaves, especially the lower, with stip.; leaves opposite; racemes bracteate.

1. H. *polifólium.* *S.* 7, 8. (W.) E.-2. Leaves revolute at edge, hoary on both sides; pubescence stellate; inner sep. obtuse.—Torquay. Somersetshire.
2. *H. vulgáre.* *S.* 7-9. (Y.) 18. Leaves green above, hoary beneath, edges nearly flat; inner sep. obtuse, apiculate.—Dry pastures.
   - β. *surréjanus.* pet. lanceolate, often cut.
   - γ. *tomentósum.* more pubescent.

* Leaves, especially the lower, without stipules.

† Low shrubs; racemes bracteated, terminal.

3. H. *cánum.* *S.* 5-7. (Y.) E. I.-3. Leaves opposite, ovate or oblong; stalked, flat, hoary beneath; style twisted at base, point inflexed.—Alpine rocks. Great Arran Isle.

† Herbaceous plants.

4. H. *guttátum.* Erect; racemes without bracts; leaves oblong-lanceolate, *A.* 6, 7. (Y. * R.) E.-1. or linear, the lower opposite, upper alternate, with or without stip.—Holyhead Mountain. Jersey.

5. H. *Bréweri.* Straggling; pedicels with linear bracts; leaves linear-*A.* 6, 7. (W.) E.-2. oblong, very obtuse, those of stem opposite, sessile, stipulate, of root rosulate.—Holyhead Mountain. Alwich.

ORDER XLIX.—BRASSICEÆ OR CRUCIFERÆ.

Herbs with alternate leaves, abounding in an acrid, pungent principle, but none injurious. Fl's generally racemose. *Sep.* and *pet.* 4, *the latter cruciate*, rarely 0. *Stam.* 6, *tetradynamous*, rarely 4 or 2. Disk with glands between pet., stam., and ov. Ov. superior, with 2 parietal placentæ which meet in the middle, forming a septum; stigmas 2, opposite the placentæ. *Fruit a siliquæ* or *silicula*, 1 or spuriously 2-celled, 1 or more seeded. *Alb.* 0; rad. folded in various ways upon the cotyledons, so as to present, on making a section of a half ripe seed appearances, which the following symbols have been adopted to represent:—*Incumbent* (o ‖), the rad. being simply bent up, and lying against the back of the cot. *Accumbent* (o =), the rad. bent up, but lying against the edges of the cot. Again, the radical is incumbent, but the cot. are doubled on themselves thus: (o ‖ ‖); or doubled a second time thus: (o ‖ ‖ ‖). *Conduplicate* (o >>), the rad. being incumbent, and the cot. folded lengthwise, so as to receive the rad. within the fold. Upon these characters De Candolle has made his divisions of this order to depend: an arrangement, which is observed below in the descriptions of the species:—

- * Fruit a siliqua or pod, except in some Nasturtia; but in these the fl's are yellow, the septum broad, and the embr. (O =.)
  - † Pod separating transversely into 1-seeded joints. . . 34. RAPHANUS.
  - † Pod continuous, not in 1-seeded joints.
    - ‡ Cal. with 2 opposite sep., saccate at base.
      - Stigmas sessile, connivent, gibbous, or horned at back. Pod terate, or laterally compressed. . } 1. MATTHIOLA.
      - Stigmas on a short style, capitate, or patent, simple. Pod dorsally compressed. . . . . } 2. CHEIRANTHUS.
      - Stigmas nearly sessile, converging, simple. Pod terate, or 4-cornered. . . . . } 19. HESPERIS.
    - ‡ All the sep. equal at base.
      - § Pod compressed, 2-edged.
        - ‖ much longer than its pedicel.
          - Valves with 1 prominent rib. Seeds in 2 rows. . . . . } 5. TURRITIS.
          - Valves mostly 1-ribbed. Seeds in 1 row. . 6. ARABIS.
          - Valves ribless; seeds in 1 row. . . 7. CARDAMINE.
        - ‖ Pod equal to, or shorter than its pedicel,
          - lanceolate, ribless. Seeds in 1 row, their stalks winged. . . . . } 8. DENTARIA.
          - Pod linear, 1-ribbed. Seeds in 2 rows, their stalks simple. . . . . } 30. DIPLOTAXIS.
      - § Pod not compressed, terate, or 4-angular.
        - ‖ Sep. spreading almost horizontally. Valves convex, 1, 3 or 5-ribbed. . . . } 31. SINAPIS.
        - ‖ Sep. erect.
          - ¶ Pod terate,
            - ** equal to, or shorter than pedicel. Valves convex,
              - each 1-ribbed. Sep. close. Seeds in 1 row, their stalks simple. . } 32. BRASSICA.
              - Each valve 3-ribbed. Sep. lax. Seeds in 1 row, their stalks winged. . } 22. ALLIARIA.

Valves ribless. Sep. lax. Seeds irregularly in 2 rows. . . } 3. NASTURTIUM.
** Pod much longer than pedicel. Valves 3-ribbed. . . } 20. SISYMBRIUM.
¶ Pod quadrangular. Sep. erect. Seeds in 1 row.
Stigma entire. Valves 1-ribbed. . . 4. BARBAREA.
Stigma entire. Valves 3-ribbed. . . 21. CONRINGIA.
Stigmas 2, spreading. Valves keeled, with 1 rib. . . . . } 23. ERYSIMUM.
* Fruit a silicula, which, if accompanied with yellow fl's, its septum is narrow.
† Silicula 1, rarely 2-seeded, without a septum, globose and 1-celled. . . . . 33. CRAMBE.
Silicula angular, sometimes 2-celled. . . . 18. CAKILE.
Silicula laterally compressed, 1-celled. . . . 29. ISATIS.
† Silicula divided by a septum into 2 cells, 2 or more seeded,
‡ laterally compressed.
§ 1 Seeds solitary in each cell. Septum linear.
Valves ventricose. Silicula 2-lobed. . 25. CORONOPUS.
Valves compressed, keeled. Pet. equal. . 26. LEPIDIUM.
Valves compressed, winged. Pet. unequal. . 14. IBERIS.
§ 2 Seeds 2 in each cell. Septum narrow.
Silicula emarginate at summit. . . 15. TEESDALIA.
Silicula entire at end. . . . 16. HUTCHINSIA.
§ 3 Seeds more than 2 in each cell.
‖ Leaves subulate. Septum ovate. . . 28. SUBULARIA.
‖ Leaves not subulate. Septum linear.
Silicula roundish, notched. Valves winged. 17. THLASPI.
Silicula triangular-obcordate. Valves keeled. 27. CAPSELLA.
‡ Silicula not laterally compressed.
§ Valves ventricose. Silicula terete. Seeds many,
Valves having a linear process at end confluent with the style. . . . . } 24. CAMELINA.
Valves rounded at end, with a prominent, dorsal dorsal rib. . . . . } 12. COCHLEARIA.
Valves rounded at end, without a rib. . . 13. ARMORACIA.
§ Valves flat, or convex. Silicula dorsally compressed.
Cells, each 1 or 2-seeded. Fil. simple. Hypogynous glands 8. . . . . } 10. KONIGA.
Cells 2-4-seeded. Fil. toothed. Hypogynous glands 4. . . . . } 9. ALYSSUM.
Cells many-seeded. Fil. simple. Glands 0. . 11. DRABA.

SUB-ORDER I.—PLEURORHIZINÆ.—Cot. flat, accumbent (ó =). Rad. lateral. Seeds compressed.

Tr. I. *ARABIDÆ. Siliqua linear, or linear-lanceolate, rarely globose or ovate, dehiscing with 2 valves. Seeds numerous. Cot. parallel with septum.*

1. MATTHI'OLA. *Br.* Stock.

Pod rounded, or laterally compressed. Stigma of 2 erect lobes, gibbous or horned at the back. Cal. erect. Longer fil. dilated.

1. M. *incána.* *P.* 5, 6. (—R.) E.-1. — Stem shrubby, upright, branched; leaves lanceolate, hoary, entire; pods cylindrical, without glands.—Isle of Wight.
2. M. *sinuáta.* *B.* 6-8. (P.) E. I.-2. — Stem herbaceous, spreading; leaves oblong, downy, the lower sinuate; pods compressed, glandular.—Shores, Wales. Cornwall. Arran Isle.

2. CHEIRA'NTHUS. *L.* Wall-flower.

Pod dorsally compressed; valves, each 1-ribbed. Style short; stigma of 2 patent lobes, or capitate. Sep. erect, 2 opposite ones saccate at base.

1. C. *Chéiri.* *P.* 4, 5. (+Y.) 18. Leaves lanceolate, acute, entire, with bi-partite, adpressed hairs; lobes of stigma patent; stem shrubby.—Ruins.

3. NASTU'RTIUM. *Br.* Cress.

Pod nearly cylindrical (sometimes a silicula). Valves convex, almost ribless. Stigma capitate. Sep. patent. Seeds in 2 irregular rows.

* Leaves pinnate, or deeply and regularly pinnatifid.

1. N. *officinále.* *P.* 6, 7. (W.) 20. leafl. ovate, subcordate, sinuate-dentate; pods linear, about as long as ped.—Ditches, &c.
2. N. *sylvéstre.* *P.* 6-8. (Y.) 10. Segments of leaves lanceolate, cut, those of the uppermost entire; pod linear, equalling ped.—Wet places.

* Leaves, especially the lower, scarcely pinnatifid, mostly lyrate.

3. N. *ánceps.* *P.* 7, 8. (Y.) E. S.-3. Lower leaves lyrate, upper pinnatifid, segments oblong-lanceolate, toothed; pods oblong, half as long as ped.; pet. twice as long as cal.—Wet places.
4. N. *amphíbium.* *P.* 6-8. (Y.) 17. Leaves oblong-lanceolate, serrated; pods elliptical, much shorter than ped.; pet. longer than cal.—Wet places.
5. N. *terréstre.* *P.* 6-9. (Y.) 19. Lower leaves lyrate, upper deeply pinnatifid; pods oblong, turgid, as long as ped.; pet. as long as cal.—Wet places.

4. BARBARE'A. *Br.* Winter-cress.

Pod 4-angular, the valves convex, with a prominent rib. Stigma capitate. Cal. erect. Seeds in 1 row.

* Uppermost leaves undivided, toothed, the lower lyrate,

† having the 2 upper lobes, and the large terminal one equal in breadth.

1. B. *vulgáris.* *P.* 5-8. (Y.) 20. Raceme close; pods, when young, erect, straight; seeds angular, scarcely longer than broad.—Damp places.
2. B. *arcuáta.* *B.* ? 5-8. (Y.) E.-1. Raceme lax; pods, when young, patent, curved; seeds oblong.—Llangollen, Wales.

† Lower leaves, with the 2 upper lobes narrower than the terminal one.

3. B. *stricta.* *B.* ? 5-8. (Y.) E.-2 Raceme close; pods adpressed; seeds angular, about as long as broad.—Near Sheffield, Weedon.

* Uppermost leaves pinnatifid,

4. B. *præ'cox.** *B.* 4-8. (Y.) E.-6. with linear, oblong, entire segments, the lower lyrate; pods patent, straight.—Waste places.

5. TURRI'TIS. *L.* Tower-mustard.

Pod elongated, 2-edged; valves nearly flat, with a prominent rib. Stigma capitate. Seeds in 2 rows.

1. T. *glábra.* *B.* 6, 7. (—Y.) E.-7. Radical leaves toothed, hairy, those of stem glabrous, entire, sagittate, clasping; stem erect.—Banks.

6. A'RABIS. *L.* Rock-cress.

Pod linear, compressed; valves nearly flat, with a prominent rib, or several indistinct ones. Stigma nearly sessile. Seeds in 1 row.

* Stem-leaves with a cordate, clasping base.

1. A. *hirsúta.* *B.* 6-8. (W.) 15. — Pods straight, erect, with slightly keeled valves; leaves all hispid, toothed.—Old walls, rocks, and banks.
2. A. *Turrita.** *B.* 5. (W.) E. S.-2. — Pods recurved, its stalk erect; lower leaves clothed with forked hairs, elliptical, toothed, stalked.—Walls.

* Stem leaves not clasping.

3. A. *ciliáta.* *B.* 7. (W.) I. S.-1. — Leaves glabrous, ciliated, somewhat toothed, the lower oval, nearly sessile.—Sea-cliffs. Cunnemara. Glen Esk.
4. A. *stricta.* *P.* 4, 5. (W.) E. I.-1. — Leaves hispid and ciliated, the lower somewhat lyrate, stalked; pods erect.—Limestone. Bristol. Arran Isle.
5. A. *petræ'a.* *P.* 7, 8. (p. W.) 1. — Leaves glabrous, or hairy, the radical ones lyrate-pinnatifid, stalked; pods spreading.—Rocks.

7. CARDAMI'NE. *L.* Bitter-cress.

Pod compressed; valves flat, ribless, dehiscing elastically. Seeds in 1 row, on simple, filiform stalks.

* Petioles of stem-leaves with ciliated, sagittate stip.; leaves pinnate.

1. C. *impátiens.* *A.* 7, 8. (W.) E.-6. — Leafl. of the lower leaves ovate, 3-fid, of the upper, lanceolate, cut, or entire; pet. linear, or 0.—Moist rocks.

* Petioles not stipuled; leaves pinnate.

† Pet. twice as long as cal.

2. C. *sylvática.* *A.* 4-9. (W.) E. S. — Stam. 6; leafl. of the lower leaves roundish, angled, or toothed; pods erect, the pedicels patent.—Woods.
   β. *hirsúta.* — stam. 4; pods and pedicels erect.

† Pet. 3 times the length of cal.; leafl. of lower leaves roundish,

3. C. *pratensis.* *P.* 5. (p. W.) 20. — toothed, of the upper leaves linear, lanceolate, entire; stem simple; stam. half the length of pet.—Moist fields.
   β. *dentáta.* — leafl. of lower leaves acutely angular.
4. C. *amára.* *P.* 5, 6. (W.) 14. — Leafl. of all the leaves angular, toothed, of the upper oblong; stem with scions; stam. nearly as long as pet.—Wet fields.

8. DENTA'RIA. *L.* Coral-wort.

Pod compressed, lanceolate; valves flat, ribless, dehiscing elastically. Stigma capitate. Seeds in 1 row, on dilated, winged funiculi.

1. D. *bulbífera.* *P.* 4, 5. (P.) E. S.-1. — Stem quite simple; lower leaves pinnated; upper ones simple, with axillary bulbs.—Shady places. Sussex. Dalkeith.

Tr. II. *ALISSIDÆ. Silicula bi-valved. Valves flat, or concave; septum broad, oval, membranous. Seeds compressed, or ovate. Cot. flat, accumbent, parallel with septum.*

9. ALY'SSUM. *L.*

Silicula roundish or oval, dorsally compressed. Fil. toothed. Hypogynous glands 4. Seeds 2-4 in each cell.

1. A. *calycínum.** Stellately hoary; leaves obovate-lanceolate, attenuate be-
A. 5, 6. (—Y.) E. S.-1. low; silicula roundish, pubescent; cal. persistent.

10. KONI'GA. Br.

Silicula oval, dorsally compressed. Fil. simple. Hypogynous glands 8. Seeds 1, rarely 2 in each cell, the base of their stalks adnate with the septum.

1. K. *marítima.** Stem procumbent, with bi-partite hairs; leaves linear-
P. 8, 9. (W.) 1. lanceolate, acute; silicula oval, pointed, glabrous.—Sea-cliffs.

11. DRA'BA. *L.* Whitlow-grass.

Silicula oval, slightly convex. Fil. simple. Cells many-seeded.

* Stalks leafless, or rarely 1-leaved.
1. D. *vérna.* Pet. deeply cloven; leaves lanceolate, somewhat toothed,
A. 3-5. (W.) 20. hairy.—Walls, &c.
β. inflâta. silicula inflated.
2. D. *aizoides.* Pet. slightly notched; leaves linear-lanceolate, glabrous,
P. 3, 4. (Y.) E.-1. keeled, ciliated, in dense tufts; silicula with a long style.—Walls, Swansea.
3. D. *rupéstris.* Pet. undivided; leaves plane, lanceolate, stellately hairy;
P. 7. (W.) I. S.-1. silicula, style short.—Arran Isle. Highlands.
* Stalks leafy.
4. D. *incána.* Leaves lanceolate, toothed, stellately hoary; silicula some-
B. 6, 7. (W.) 2. what twisted, erect; style slender.—Mountains.
5. D. *murális.* Leaves ovate, clasping, toothed, scabrous; silicula not
A. 4, 5. (W.) 1. twisted, spreading; style 0.—Rocks, Walls.

12. COCHLEARI'A. *L.* Scurvey-grass.

Silicula globose, many-seeded; valves very convex, with a prominent, dorsal rib.

* Radical leaves cordate, or reniform, stalked.
1. C. *officinális.* Stem-leaves sessile, oblong, sinuated, half-clasping; silicula
A. 5, 6. (W.) 10. globose.—Wet places by the sea.
β. alpína. leaves smaller; silicula ovate.
2. C. *Dánica.* Stem-leaves stalked, 3-5-lobed, somewhat deltoid; silicula
A. 5. (W.) 20. ovate-elliptical, veiny.—Sea-coast.
β. integrifólia. radical leaves reniform, all entire.
* Radical leaves ovate-oblong, toothed near the base, stalked.
3. C. *Anglica.* Stem-leaves mostly sessile, lanceolate, toothed; silicula
A. 5. (W.) 20. elliptical, strongly reticulated with veins.—Sea-shores.

13. ARMORA'CIA. *Rupp.* Horse-radish.

Silicula globose, many-seeded; valves very convex, ribless.

1. A. *rusticána.** Radical leaves oblong, crenate, on long petioles; stem
P. 5. (W.) E. S.-13. leaves elongate-lanceolate, sub-sessile; silicula oval.—Near gardens.

Tr. III. *THLASPIDÆ. Silicula laterally compressed, with a narrow septum, and keeled or winged valves.*

14. I'BERIS. *L.* Candy-tuft.

Silicula ovate, or roundish, emarginate; valves keeled and winged; cells 1-seeded. The outer pet. longest. Fil. simple.

1. I. *amára.* *A.* 7. (W.) E. S.-4. — Leaves lanceolate, acute, somewhat toothed, glabrous; fl's in oblong clusters, at first corymbose.—Chalk-fields.

15. TEESDA'LIA. *Br.*

Silicula roundish, emarginate, the valves keeled below, winged above; cells 2-seeded. Fil. with a scale at the inside or the base of each.

1. T. *nudicaúlis.* *A.* 5. (W.) E. S.-16. — Leaves numerous, radical, lyrate-pinnatifid; pet. unequal. —Dry, gravelly places.

16. HUTCHI'NSIA. *Br.*

Silicula oval, entire; valves keeled, not winged; cells 2-seeded. Fil. simple.

1. H. *petræ'a.* *A.* 3, 4. (W.) E.-2. — Leaves pinnate, entire; pet. scarcely equal to cal.; silicula obtuse at both ends; stigma sessile.—Rocks, Walls.

17. THLA'SPI. *L.* Penny-cress.

Silicula roundish, emarginate; valves winged; cells many-seeded. Fil. simple.

1. T. *arvénse.* *A.* 5, 7. (W.) 17. — Silicula orbicular, with a broad wing; leaves oblong-sagittate, toothed, glabrous.—Fields. Roadsides.
2. T. *perfoliátum.* *A.* 5. (W.) E.-2. — Silicula obcordate, style included within the notch; stem leaves cordate, somewhat toothed, glabrous.—Oxfordshire. Gloucestershire.
3. T. *alpéstre.* *P.* 6-8. (W.) E. S.-3. — Silicula triangular-obcordate; style exserted beyond the notch; stem-leaves cordate, sagittate.—Hilly pastures.

Tr. IV. *CAKILIDÆ. Silicula or siliqua jointed, each joint with* 1 *or more seeds. Septum often absent.*

18. CAKI'LE. *Gært.* Sea-rocket.

Silicula angular, of 2, 1-seeded, indehiscent joints, the upper joint deciduous, with an erect seed, the lower persistent, seedless, or with 1 pendent seed.

1. C. *marítima.* *A.* 6, 7. (p. W.) 10. — Joints of silicula 2-edged, the upper one sagittate; leaves fleshy, pinnatifid, somewhat toothed.—Sea-shores.

SUB-ORDER II.—NOTORHIZINÆ. Cot. flat, incumbent (o ‖). Rad. lying on back of cot. Seeds ovate, not bordered.

Tr. V. *SISYMBRIDÆ. Siliqua elongated,* 2-*valved; valves concave, or keeled; septum narrow.*

19. HE'SPERIS. *L.* Dame's Violet.

Pod 4-angular, or somewhat 2-edged. Stigma sub-sessile of 2 converging, simple lobes. Cal. erect. Seeds in 1 row.

1. H. *matronális.** *B.* 5, 6. (—P.) 10. Stem erect; leaves ovate-lanceolate, toothed; pet. obovate, obtuse, apiculate; pods erect, twisted —Hilly pastures.

20. SISY'MBRIUM. *L.* Hedge-mustard.

Pod terate; valves 3-ribbed. Cal. erect. Stigma entire. Seeds in 1 row, compressed.

1. S. *officinále.* *A.* 6, 7. (—Y.) 20. Pods subulate, pubescent, adpressed to the hispid stem, nearly sessile; leaves runcinate-pinnatifid, hairy.—Way-sides.
2. S. *Irio.* *A.* 7, 8. (Y.) 4. Pods terate-linear, longer than pedicels, nearly erect; leaves runcinate, toothed, glabrous as well as stem.—Waste places.
3. S. *Sophia.* *A.* 6-8. (—Y.) 16. Pods terate-linear, longer than pedicels, rather patent; leaves 2 or 3-pinnatifid, with narrow segments, and as well as stem, slightly downy.—Rubbish.

21. CONRI'NGIA. *Link.*

Pod 4-angled; valves 3-ribbed, the middle one prominent. Cal. erect. Stigma entire. Seeds as in *Sisymbrium.*

1. C. *thaliána.* *A.* 4. (W.) 20. Leaves somewhat toothed, hairy, radical ones oblong, slightly stalked; stem branched; pods ascending.—Walls.

22. ALLIA'RIA. *Adans.* Sauce-alone.

Pod terate; valves convex, 3-ribbed, the middle one prominent, the lateral ones branching. Cal. lax. Stigma entire. Seeds in 1 row, striated; funicle flattened, winged.

1. A. *officinális.* *B.* 5, 6. (W.) 20. Leaves cordate, the lower reniform, sinuate-dentate, all stalked; seeds oblong, striated.—Hedge banks.

23. ERY'SIMUM. *L.* Treacle-mustard.

Pod 4-angled; valves keeled with 1 prominent rib. Cal. erect. Stigma obtuse, sometimes emarginate with patent lobes.

1. E. *Cheiranthoides.* *B.* 6-8. (Y.) E. I.-9. Leaves lanceolate, mostly entire, with 3-partite hairs, leafl., all stalked; ped. longer than cal.; pods patent, ascending.—Cultivated ground.
2. E. *virgátum.* *B.* 7, 8. (Y.) E.-1. Leaves linear-lanceolate, entire, with 2 or 3-partite hairs, upper sessile; ped. as long as cal.; pods erect.—Bath.
3. E. *orientále.* *A.* 6. (W.) E.-2. Leaves elliptic-cordate, obtuse, clasping, radical ones obovate, all glaucous, entire.—Western coast.

Tr. VI. *CAMELINIDÆ.* *Silicula laterally compressed. Valves concave or keeled, at right angles with cot.*

24. CAMELI'NA. *Crantz.* Gold of pleasure.

Silicula sub-ovate, many-seeded; valves inflated, having a linear prolongation at end, confluent with the style.

1. C. *sativa.** *A.* 6, 7. (Y.) — Silicula obovate, bordered, twice as long as style; stigma 4. simple; leaves lanceolate, sagittate.—Flax fields.

Tr. VII. *LEPIDIDÆ.* *Silicula with a very narrow septum, parallel with cot. Valves very concave or keeled.*

25. CORONO'PUS. *Gært.* Wart-cress.

Silicula of 2 ventricose lobes. Seed solitary in each cell.

1. C. *Ruéllii.* *A.* 6, 9. (W.) — Silicula entire, undivided, reniform, crested with little sharp 17. points; style prominent; leaves pinnatifid. — Waste ground.
2. C. *dídyma.* *A.* 7-9. (W.) E. L-3. — Silicula emarginate, of 2 wrinkled lobes; style very short; leaves pinnatifid.—Waste ground, near sea.

26. LEPI'DIUM. *L.* Pepper-wort.

Silicula roundish or oblong, entire or notched; valves compressed, keeled or winged. Pet. equal. Seeds 1 in each cell.

* Silicula with valves winged towards end, ovate, emarginate,

1. L. *Smíthii.* *P.* 7, 8. (W.) — with few scales, or 0; style much longer than the notch; 11. lower leaves obcordate, stalked, upper lanceolate sagittate.—Banks.
2. L. *campéstre.* *A.* 6-8. (W.) — Silicula scaly; style not longer than notch; lower leaves 17. oblong, narrowed into a foot-stalk, upper as last.—Dry soil.

* Silicula with valves not winged, roundish, notched.

3. L. *ruderále.* *A.* 6. (W.) — Radical leaves pinnatifid, those of branches linear, entire; 4. fl. diandrous, apetalous.—Near sea.
4. L. *Drába.** *P.* 5, 6. (W.) E.-2. — Silicula cordate; valves turgid; radical leaves oblong, entire, or toothed, those of stem sagittate, clasping; fl's tetradynamous, with pet.—Fields.
5. L. *latifólium.* *P.* 7. (W.) — Silicula oval, entire; leaves ovate, lanceolate, serrate, or 6. entire; fl. as last.—Wet, shady places.

27. CAPSE'LLA. *De C.* Shepherd's-purse.

Silicula triangular-obcordate; valves compressed, sharply keeled, without wings, many-seeded.

1. C. *Bursa-pastóris.* *A.* 3-9. (W.) — Radical leaves lanceolate, pinnatifid, or undivided, toothed; 20. silicula triangular-obcordate.—Waste places.

28. SUBULA'RIA. *L.* Awl-wort.

Silicula oval, laterally compressed. Valves boat-shaped, turgid, many-seeded.

3. *aquática.* *P.* 7. (W.) — Leaves few, radical, subulate; fl's small, sub-merged; 4. root of long, white fibres.—In shallow water.

Tr. VIII. *ISATIDÆ. Silicula* 1-*celled*, 1-*seeded, scarcely dehiscent. Valves keeled.*

29. I'SATIS. *L.* Woad.

Silicula laterally compressed, 1-celled, 1-seeded, valves keeled, at length separating.

1. I. *tinctória.** Silicula obovate-oblong, abrupt, smooth; radical leaves
B. 6. (Y.) E.-2. oblong, crenate, those of stem sagittate, entire.—Fields.

SUB-ORDER III. ORTHOPLOCINÆ (o > >). Cot. incumbent, folded lengthwise on the midrib, and receiving the radical. Seeds generally globose.

Tr. IX. *BRASSICIDÆ. Siliqua dehiscing with* 2 *valves. Septum linear.*

30. DIPLOTA'XIS. *De C.*

Pod compressed; valves sub-convex, with 1 straight rib. Seeds oval or oblong, in 2 rows.

1. D. *tenuifólia.* Stem branched, leafy, glabrous; leaves glaucous, lanceo-
P. 7-9. (Y.) E. S.-9. late, acute, 1 or 2-pinnatifid; upper entire.—Rubbish.
2. D. *murális.* Stem simple, almost leafless, hispid; leaves glabrous, ovate-
A. 8, 9. (Y.) 2. lanceolate, sinuate, or lyrate.—Dry places.

31. SI'NAPIS. *L.* Mustard.

Pod terate; valves convex, with 1, 3, or 5 strong ribs. Cal. spreading. Seeds globose, in 1 row.

* Pods closely adpressed to the stem,
1. S. *incána.* turgid, with a short, 1-seeded beak; valves 1-ribbed;
B. 7, 8. (Y.) C. leaves lyrate, hispid, those of stem linear-lanceolate.—Sandy places.
2. S. *nigra.* Siliqua 4-angular, without a beak; leaves lyrate, toothed,
A. 6-8. (Y.) 17. hispid, of stem linear-lanceolate, glabrous.—Hedge banks.
* Pods spreading, knotty and turgid,
3. S. *arvénsis.* longer than the conical, 2-edged beak; valves 3-ribbed;
A. 6-8. (Y.) 20. leaves ovate, stalked, upper sessile.—Corn fields.
β. *retrohirtus.* plant rough, with deflexed bristles.
4. S. *álba.* Siliqua shorter than the ensiform beak; valves 5-nerved;
A. 7. (Y.) 18. leaves lyrate-pinnatifid.—Waste places.

32. BRA'SSICA. *L.* Cabbage. (4 B.) Turnep (1 B. β).

Pod terate; valves convex, 1-ribbed. Cal. erect. Seeds globose, in 1 row, their stalks not winged.

* Lower leaves more or less hispid; stem erect, leafy,
1. B. *campéstris.* lyrate, toothed; upper cordate, acuminate, clasping; root
A. 5, 6. (Y.) 6. and stem slender; pod cylindrical, veiny, beak subulate, seedless.—Borders of fields.
β. *Rápa.* root fleshy, orbicular, depressed.
2. B. *Cheiránthus.* Leaves stalked, all deeply pinnatifid; pods cylindrical,
P. 6-8. (Y.) C. 3-ribbed, beak 1-3-seeded.—St. Aubin's Bay, Jersey.

* Leaves all glabrous.

3. B. *Monénsis.* *P.* 7. (Y.)	2.	Pods with 3-ribbed valves, and a 1-2-seeded beak; leaves deeply pinnatifid; stem prostrate, leafless.—Sea-coast.
4. B. *oleràcea.* *B.* 5, 6. (Y.)	4.	Pods ribless, and without a beak; leaves glaucous, waved, and lobed, lower lyrate, those of the erect stem oblong, sessile.—Sea-cliffs.
5. B. *Nápus.* *B.* 5, 6. (Y.)	17.	Pods as last; leaves glabrous, the lower lyrate, toothed, those of erect stem cordate, lanceolate, clasping.—Borders of fields.

Tr. X. *RHAPHANIDÆ. Siliqua or silicula dividing transversely into 1-seeded joints or cells. Seeds globose.*

33. CRA'MBE. *L.* Sea-kale.

Silicula of 2 joints; the upper globose, indehiscent, deciduous, with 1 seed pendent from a long curved funicle, which arises from the base of cell; lower joint barren.

1. C. *marítima.* *P.* 6. (W.)	7.	Longer fil. forked; silicula pointless; leaves roundish, serrated, waved, toothed, glaucous, glabrous as well as stem.—Sea-shore.

34. RA'PHANUS. *L.* Radish.

Pod linear or oblong, tapering upwards, indehiscent, or dividing across into 1-seeded cells, the lowermost cell barren, resembling a pedicel. Cal. erect.

1. R. *marítimus.* *A.* 6, 7. (Y.)	18.	Radical leaves interruptedly pinnate; siliqua moniliform, jointed, of 1-cell, striated.—Corn fields.
2. R. *Raphanístrum.* *A.* 6, 7. (Y.) E. S.-2.		Leaves simply lyrate; siliqua moniliform, jointed, of 1-cell, striated.—Beechy Head. Bute, Galloway.

ORDER L.—RESEDEÆ.

Herbs, rarely small shrubs, with alternate leaves, and minute, gland-like stipules, possessing no remarkable properties. Fl. racemose, or spiked. *Sep. many. Pet.* broad, fleshy, unequal, with lacerated appendages at back. Stam. numerous (12-20), on a one-sided disk. Ov. 1-celled, of 3 carpels, scarcely closed; stig. 3, sessile. *Fruit open at apex*, with parietal placentæ; or rarely apocarpous, with empty carpels surrounding a free, central placenta. Seeds numerous, reniform; *embr. curved, exalbuminous;* rad. next hilum.

1. RESE'DA. *L.* Dyer's-rocket.

Cal. many-parted. Pet. more or less divided, unequal. Stam. numerous. Capsule 1-celled, opening at end; stigmas 3-6, sessile.

1. R. *Lutéola.* *B.* 7, 8. (—Y.)	19.	Leaves undivided, lanceolate; sep. 4; pet. 4 or 5, very unequal, longer than cal.—Waste places.
2. R. *lútea.* *B.* 6-8. (Y.) 14. I.-2.		Leaves 3-cleft, or pinnatifid, the lower pinnate; sep. 6; pet. 6, very unequal, as long as sep.—Waste places.
3. R. *fruticulósa.** *P.* 7, 8. (W.)	3.	Leaves all pinnate, waved, glaucous; segments, linear, acute; sep. 5, linear-lanceolate; pet. 5, nearly equal, 3-fid, longer than cal.—Waste places, near sea.
β. *álba.*		pet. and sep. 6.

ORDER LI.—TAMARISCINEÆ.

Shrubs, or herbs, with bitter, astringent qualities. Leaves alternate, simple, scale-like. Fl. in spikes or racemes. *Cal.* 4-5-*parted*, persistent. Pet. 4-5. *Stam. hypogynous*, as many, or twice as many, sometimes monadelphous; æstivation imbricate. Ov. 1-celled; styles 3. *Caps.* 3-valved, *with* 3 *parietal or basal placentæ.* Seeds ascending, indefinite, comose; *alb.* 0; *embr. straight*; rad. inferior.

1. TA'MARIX.

Cal. 5-parted. Pet. 5. Stam. 5 or 10. Styles 3, patent, feathery. Seeds attached to basal placentæ, tipped by a feathery down.

1. T. *A'nglica.** *S.* 7. (—R.) E.-2. Leaves minute, appressed, clasping, spurred; spikes lateral, somewhat panicled, slender.—Coast.

ORDER LII.—FRANKENIEÆ.

Herbs, or under shrubs, without any important qualities, with opposite, exstipulate leaves, having a membranous sheathing base revolute at edge. Fl. in the divisions of branches. *Sep.* 4-5, *united into a furrowed tube below. Pet. hypogynous*, alternate with sep., *clawed, with appendages at base of limb.* Stam. as many as, or more than pet.; anth. free, versatile, opening longitudinally. Style filiform 2, 3, or 4-fid. *Ovules* indefinite, *attached to parietal placentas* by long stalks. Caps. 1-celled inclosed in cal., 2, 3, or 4-valved, the placentæ on their margins. *Embr. straight* erect, *in the midst of a small alb.*, with a very short, inferior rad.

1. FRANKE'NIA. *L.* Sea-heath.

Sep. united. Pet. 6. Style 3-fid; lobes oblong, the stigma on the inner side.

1. F. *læ'vis.* *P.* 8, (R.) E.-3. Leaves linear, revolute at margin, glabrous, ciliated at the base; stem prostrate.—Salt marshes.

ORDER LIII.—VIOLARIEÆ.

Herbs, rarely shrubs, with simple, stipulate, usually alternate leaves, involute in vernation, possessing emetic and purgative properties. *Sep.* 5, imbricate in æstivation, mostly elongated at base. *Pet.* 5, often unequal. *Stam.* 5; *anth. introrse, crested*, 2 in the irregular fl's with an appendage at base. Ov. 1-celled, with 3, many-seeded, parietal placentæ opposite the outer sep. Style single, mostly declinate, with an oblique, hooded stigma. *Caps.* 3-*valved, bearing the parietal placentæ* in their axis. *Embr. straight*, erect, *in axis of a small, fleshy alb.*

1. VI'OLA. *L.* Violet.

Sep. elongated at base. Pet. unequal, the lower one produced into a hollow spur at base. Anth. cohering, 2 lower ones spurred behind.

* Plants with an evident stem.

† Stip. of the middle leaves pinnatifid; stigma urceolate; leaves ovate, crenate.

1. V. *tricolor.* Stip. lyrate-pinnatifid, the terminal lobe spathulate, crenate; spurs of anth. filiform-clavate.—Dry places.
A. 5-9. (Y. * B.) 20.
β. *arvénsis.* pet. shorter than cal.
2. V. *lútea.* Stip. palmately pinnatifid, the terminal lobe narrow, entire; spurs of anth. elongated, filiform.—Pastures.
P. 5-7. (Y. * P.) 9.
β. *amæ'na.* leaves broadly ovate, subcoriaceous; fl. deep yellow.
γ. *Curtisii.* stem angular, rough; pet. hairy.—Near sea.

† Stip. of middle leaves lanceolate, entire, ciliated or toothed; stigma not urceolate, an oblique point.

3. V. *canina.* Leaves ovate or oblong, cordate; spurs of anth. lanceolate, acute; sep. acuminate.—Shady places.
P. 4-8. (B. *v.* b. W.) 20.
β. *sylvática.* leaves sub-reniform, acuminate; stip. lanceolate, attenuate; fruit acuminate.
γ. *pusílla.* leaves small, roundish-cordate, rather acute; stem woody at base.
δ. *flavicórnis.* similar to last, but with cordate, oblong leaves.
ε. *láctea.* leaves ovate-lanceolate, narrowed at base into a petiole, the lower cordate; stip. large, cut; fl. cream-coloured.

* Plants without an evident stem.

4. V. *Odoráta.* Leaves cordate, glabrous, petioles with deflexed hairs; scions creeping; spur of cor. straight; spur of anth. lanceolate; bracts near fl.; lateral pet. with a hairy line.—Banks.
P. 3, 4. (B. *v.* W.) 18.
β. *imbérbis.* pet. without a hairy line, white.
5. V. *hirta.* Leaves cordate, hairy, as well as petioles; scions 0; spur of cor. hooked at end; bracts distant from fl's; spurs of anth. linear.—Woods.
P. 3, 4. (—B. *v.* W.) 15.
β. *minor.* fl. smaller; ped. much longer than leaves.
6. V. *palústris.* Leaves reniform-cordate, glabrous; scions 0; spur of cor. straight, obtuse; spurs of anth. short, thick, rounded; pet. without a hairy line.—Marshes.
P. 4-6. (—P.) 15.

DIVISION IV.—SYNPETALOUS HYPOGYNOUS EXOGENS.

HYPOGYNOUS EXOGENS; with the petals cohering to one another, so as to form a corolla, which is separable in a single piece.

ORDER LIV.—OROBANCHEÆ.

Leafless herbs, parasitic on the roots of other plants, with stimulant, astringent, bitter properties. Stems covered with brown scales. Cal. persistent. *Cor. irregular*, persistent, imbricated in æstivation. *Stam.* 4, *didynamous*, on cor. Anth. 1-2-celled, the cells often mucronate or bearded at base. Ov. superior, 1-celled, seated in a fleshy disk, the 2 carpels right and left of the axis; *style* 1; *stigma* 2-*lobed*. *Fruit* 1-*celled*, 2-valved, each valve *with* 1 *or* 2 *placentæ* in the middle. Seeds indefinite; *embr. minute at base of a fleshy alb.*

Cal. of 2 lateral segments.	Cor. ringent, 4 or 5-cleft.	1. OROBANCHE.
Cal. campanulate, 4-cleft.	Cor. tubular, 2-lipped.	2. LATHRÆA.

1. OROBA'NCHE. *L.* Broom-rape.

Cal. of 2 lateral segments, often combined, or deeply 4 or 5-cleft. Cor. tubular, ringent, 4 or 5-cleft, deciduous, its base persistent.

* Bracts 1 to each fl.; sep. 2, entire or bifid, separate or combined below in front.
† Sep. each equal, bifid.
‡ Upper lip of cor. nearly entire.

1. O. *májor.* *P.* 6, 7. (Br.) 15. — Cor. campanulate, inflated at base; lips wavy, denticulated, the middle lobe of the lower one much the longest; sep. 1-nerved.—On *Broom* and *Furze.*

‡ Upper lip of cor. 2-lobed,

2. O. *caryophyllácea.* *P.* 7. (—P.) E.-1. — lower lip of 3 obtuse, nearly equal lobes, all wavy, its tube inflated above; style pubescent; stam. hairy within, below.—On *Galium Mollugo.*

3. O. *elátior.* *P.* 6-8. (r. Br.) E.-6. — Lower lip of 3, acute, nearly equal lobes, its tube compressed above; stam. glandular-hairy in the lower half within.—On *Centaurea scabiosa.*

† Sep. entire, or with 2 subulate points,
‡ lanceolate-subulate, 1-nerved, longer than tube of cor.

4. O. *rúbra.* *P.* 7, 8. (r. Br.) 2. — Cor. campanulate, glandular-pubescent externally; lips acutely denticulated, upper emarginate; style pubescent in the upper part.—On *Thymus Serphyllum.*

‡ Sep. ovate, suddenly contracted into 1 or 2 subulate points.

5. O. *barbáta.* *P.* 7. (y.—R.) E. 1.-1. — Lower lip of cor. having the middle lobe somewhat the longest; sep. 1-nerved; stigma nearly entire.—On *Ivy.*

6. O. *minor.* *A.* 7, 8. (y.—R.) 6. — Lower lip of cor. with equal lobes; sep. many-nerved; stigma 2-lobed—On *Trifolium pratense.*

* Bracts 3 to each flower; sep. 4-5, combined below. Caps. bursting at top.

7. O. *cærúlea.* *P.* 7, 8. (B.) E.-1. — Stem simple; sep. 5, with triangular-subulate teeth; style downy; lobes of lips of cor. obtuse; anth. hairy.—On *Achillæa Millefolium.*

8. O. *ramósa.* *A.* 8, 9. (—B.) 2. — Stem branched; sep. 4, with triangular, ovate-acuminate teeth; anth. glabrous.—On *Hemp.*

2. LATHRÆ'A. *L.* Tooth-wort.

Cal. campanulate, 4-cleft. Cor. tubular, 2-lipped, the upper lip galeate, entire.

1. L. *squamária.* *P.* 4, 5. (P.) 10. — Fl. pendulous, in 1-sided racemes; stem simple, lower lip of cor. 3-cleft.—On *Hazels* and *Elm.*

ORDER LV.—GENTIANEÆ.

Mostly smooth herbs, with opposite, entire, or alternate, sessile, 3-5-ribbed leaves, and bitter qualities. *Fl. regular.* Cal. persistent. *Cor. hypogynous, staminiferous,* marcescent, the limb mostly 4-5, or 8-cleft, often fringed in the throat. Stam. as many as the segments. Carpels 2, the edges reflexed, and forming a 1, or imperfectly 2-celled *ovary, with parietal placentæ.* Style 1. *Stigmas* 2, right and left of axis. Fruit a many-seeded berry or capsule, mostly 2-valved. *Embr. minute, in axis of a fleshy alb.*; rad. next hilum.

* Fl's 4-nary. Calycine segments equal.
  Stam. 8. Cal. in 8 deep segments. . . . . 1. CHLORA.
  Stam. 4. Cal. 4 lobed, tubular. . . . . 2. CICENDIA.
* Fl's 5-nary; if 4-nary, the calycine segments are unequal.
  † Leaves opposite.
    Style erect. Anth. at length spirally twisted. . . 3. ERYTHRÆA.
    Style 0. Anth. not twisted. . . . . 4. GENTIANA.
  † Leaves alternate.
    Cor. rotate. Leaves simple. . . . . 5. VILLARSIA.
    Cor. funnel-shaped. Leaves ternate. . . . 6. MENYANTHES.

Tr. I. *GENTIANIDÆ. Leaves opposite. Cor. twisted in æstivation.*

1. CHLO'RA. *L.* Yellow-wort.

Cal. in 8 deep segments. Cor. nearly rotate. Stam. 8. Stigmas 2, bifid.

1. C. *perfoliáta.* Leaves broadly connate, the lower elliptic-oblong, narrowed
A. 7-9. (Y.) 12. below; plant glaucous.—Dry hills.

2. CICE'NDIA. *Adans.* Gentianella.

Cal. 4-cleft. Cor. 4-cleft, funnel-shaped. Stam. 4. Stigma entire.

1. C. *filifórmis.* Stem filiform, forked; fl. solitary, on long stalks; leaves
A. 7, 8. (Y.) E. I.-2. linear-lanceolate, or subulate.—Damp places.

3. ERYTHRÆ'A. *Ren.* Centaury.

Cal. 5-cleft. Cor. funnel-shaped. Stam. 5; anth. at length spirally twisted. Stigmas 2. Caps. linear, imperfectly 2-celled.

* Cal. shorter than the tube of the budding cor.; leaves ovate-oblong.

1. E. *Centáurium.* Fl. sessile, corymbosely panicled; stem erect, simple be-
A. 7, 8. (R.) 19. low; leaves elliptic-oblong, upper acute.—Dry places.
2. E. *pulchélla.* Fl. stalked, axillary and terminal; stem erect, much
A. 7-9. (—P. ? branched; leaves oblong-lanceolate, upper ovate.—Sandy shore.

* Cal. as long as the tube of cor.

3. E. *linarifólia.* Stem simple; leaves oblong-linear, obtuse, the lower
A. 7, 8. (R.) ? crowded, spathulate; fl. sessile, corymbose.—Sea shore.
4. E. *latifólia.* Stem short, branched from the base; leaves broadly ellip-
A. 6-8. (R.) E. I.-? tical, obtuse; fl. sessile, in dense, forked tufts.—Sea shore.

4. GENTIA'NA. *L.* Gentian.

Cal. 4-cleft. Cor. sub-campanulate, funnel or salver-shaped. Stam. 5. Styles often combined.

* Cor. bearded in the throat, salver-shaped.

1. G. *Amarélla.* Fl. 5-nary; calycine segments nearly equal, linear-lanceo-
A. 8, 9. (—P.) 15. late; leaves ovate-lanceolate, sessile; lower obovate.—Dry places.
   β. *Germánica.* tube of cor. enlarged upwards; ov. oblong-linear, and with the capsule stalked.
2. G. *campéstris.* Fl. 4-nary, the 2 lateral cal.-segments large, ovate; leaves
A. 8-10. (B.) 16. elliptic-oblong.—Limestone-hills.

* Cor. naked in the throat; fl. 5-nary.

† Cor. salver-shaped, with 5 large, and 5 smaller, bifid segments.

3. G. *vérna.* *P.* 4. (B.) E. I.-2. Stem 1-fl; cal. with 5 acute teeth, and prominent angles; leaves ovate, the lower tufted.—Limestone-hills.

4. G. *nivális.* *A.* 8. (B.) S.-1. Stem slightly branched; branches 1-fl'd; cal. cylindrical, with 5 acute angles; leaves elliptical, (not tufted?)—Mountains.

† Cor. campanulate, 5-cleft.

5. G. *Pneumonánthe.* *A.* 8, 9. (B.) E.-7. Fl. nearly sessile, terminal and axillary, solitary; cal.-segments, as also the leaves, linear, obtuse.—Heaths.

5. VILLA'RSIA. *Vent.*

Cal. 5-parted. Cor. rotate, the limb often ciliated. Stam 5.

1. V. *Nymphæoides.* *P.* 8. (Y.) E.-4. Leaves orbicular-cordate, floating; ped. aggregate, 1-fl'd; cor. ciliated.—Still water.

6. MENYA'NTHES. *L.* Buck-bean. Marsh-trefoil.

Cal. 5-parted. Cor. funnel-shaped; segments hairy within. Stigma 2-lobed.

M. *trifoliáta.* *P.* 5-7. (—R.) 18. Leaves ternate; leafl. equal, obovate, wavy, obscurely toothed; fl's clustered, opposite to a leaf.—Boggy places.

ORDER LVI.—APOCYNEÆ.

Herbs, but mostly trees or shrubs, frequently virulently poisonous, with a milky juice, and opposite, entire *exstipulate leaves.* Cal. persistent and with the cor. 5-parted; æstivation twisted. *Stam.* 5, *on the cor.*; anth. 2-celled. Pollen granular, globose, or 3-lobed, immediately applied to stigma. Ov. 2-lobed, 1-2-celled, many-seeded. Carpels slightly cohering. Styles 1 or 2; *stigma* 1, *contracted in the middle, the base expanded and cup-shaped.* Fruit a follicle, capsule, drupe, or berry, double or single. Seeds usually pendulous; embr. foliaceous; *alb. fleshy or cartilaginous;* rad. turned towards hilum.

1. VI'NCA. *L.* Periwinkle.

Cor. salver-shaped, with oblique segments; mouth closed with spreading hairs, and connivent stigmas. Follicles 2, erect. Seeds naked.

1. V. *minor.* *P.* 5, 6. (B.) 16. Stem procumbent; leaves elliptic-lanceolate, and with the small lanceolate teeth of cal. glabrous.—Hedges.

2. V. *májor.** *P.* 5. (B.) 12. Stem somewhat ascending; leaves ovate, cordate, their margins, as well as the elongated, subulate segments of cal. ciliated.—Hedges.

ORDER LVII.—ILICINEÆ.

Trees, or shrubs, with persistent, coriaceous, *exstipuled leaves,* possessing tonic and emetic properties. Sep. 4-6. *Cor.* 4-6-parted, *imbricate in æstivation.* Disk

0. Ov. free, 2-6-celled; *stigma sub-sessile, lobed;* ovules solitary, with a cup-shaped funicle. Fruit fleshy, 2-6-seeded; *placentæ axile. Seed hard, suspended;* embr. small, 2-lobed, lying next hilum; rad. superior; *alb. large, fleshy.*

1. I'LEX. *L.* Holly.

Cal. 4 or 5-toothed. Cor. rotate, 4 or 5-cleft. Stigmas 4, sub-sessile. Fruit seeded.

1. I. *Aquifólium.* Leaves ovate, acute, shining, wavy, with spinous teeth;
T. 5, 6. (W.) 20. fl's sub-umbellate; ped. axillary.—Woods.

ORDER LVIII.—ERICEÆ.

Shrubs, or herbs, with opposite, entire, exstipulate leaves, sometimes parasitic and leafless, possessing tonic, and in some instances diuretic or intoxicating qualities. Cal. 4-5-cleft, free, rarely adherent to ov. *Cor.* sometimes apopetalous, regular, 4-5-*cleft;* æstivation imbricate. Stam. as many, or twice as many as divisions of cor., and not usually attached to it; *anth.* 2-*celled, often appendaged, mostly opening by pores at apex.* Disk hypogynous, sometimes epigynous. *Ov.* mostly free, usually *with as many cells as divisions of fl. Fruit* capsular, or baccate, many-celled, *with axile placentæ. Embr. immersed in a fleshy alb.*

- * Ov. inferior. Stem shrubby. . . . . 1. VACCINIUM.
- * Ov. superior.
  - † Shrubs.
    - ‡ Cal. 4-parted. Stam. 8.
      - § Cor. 4-toothed, longer than cal.
        - Caps with a loculicidal dehiscence. . . 2. ERICA.
        - Caps. with a septicidal dehiscence. . . 3. DABŒCIA.
      - § Cor. 5-cleft, shorter than the coloured cal. . 4. CALLUNA.
    - ‡ Cal. 5-parted.
      - § Stam. 5. Ov. 2-3-celled. . . . . 5. AZALEA.
      - § Stam. 10. Ov. 5-celled.
        - ‖ Fruit fleshy. . . . . 6. ARBUTUS.
        - ‖ Fruit dry, 5-valved.
          - Fil. flat: anth. with 2 horns at back. . 7. ANDROMEDA.
          - Fil. filiform; anth. without horns. . 8. PHYLLODOCE.
  - † Herbs.
    - Cal. green. Style 5-lobed. . . . . 9. PYROLA.
    - Cal. coloured. Style simple. . . . . 10. MONOTROPA.

1. VACCI'NIUM. *L.* Whortle-berry.

Cal. persistent, the limb superior, entire, or, as well as the cor., 4 or 5-fid. Berry globose, 4 or 5-celled, many-seeded.

* Stem trailing, filiform; segments of cor. revolute. Leaves evergreen.

1. V. *Oxycóccos.* Leaves oblong, with revolute margins, glaucous beneath;
S. 6, 7. (R.) 12. ped. terminal, 1-fl'd; anth. simple.—Bogs.

2. V. *macrocárpum.* Leaves ovate, with plane margins, whitish beneath; ped.
S. 7. (—R.) S.-1. lateral, 1-fl'd; anth. simple.—Soughton bog, Flintshire.

* Stem not trailing, erect or spreading; segments of cor. not revolute.

† Fl. in terminal, drooping racemes; anth. simple.

3. V. *Vitis-Idæ'a.* Leaves persistent, obovate, dotted beneath; margins slightly
S. 5, 6. (—R.) 10. revolute, nearly entire.—Dry heaths.

† Ped. 1-fl'd; anth. with 2 horns at back. Leaves deciduous.

4. V. *uliginósum.* Leaves obovate, entire, glaucous and veined beneath; stems
S. 5. (—R.) E. S.-3. rounded.—Mountain bogs.

5. V. *Myrtíllus.* Leaves ovate, serrate, glabrous; stems acutely angular.—
S. 5. (r. G.) 17. Stony heaths.

Tr. II. *ERICIDÆ. Shrubs or trees. Ov. superior, with an hypogynous disk.*

2. ERI'CA. *L.* Heath.

Sep. 4. Cor. campanulate or ovate, often inflated, 4-toothed. Stam. 8. Caps. 4-celled, 4-valved, with a loculicidal dehiscence.

* Stam. included; fil. capillary; cor. urceolate.

† Anth. with appendages at base.

‡ Leaves 4-whorled, mostly ciliated; fl's capitate, (or racemose, 1 E. *γ.*)

1. E. *Tétralix.* Leaves lanceolate or linear, downy above, and on mid-
S. 7, 8. (r. P. *v.* W.) 20. rib beneath; style as long as cor.—Moors.

β. Mackáii. leaves glabrous, with revolute margins; style protruding.

γ. Watsoni. cor. ventricose; fl's racemose.

‡ Leaves 3-whorled, not ciliated; fl's racemose; style slightly protruding.

2. E. *cinérea.* Leaves glabrous, linear-lanceolate, acute, keeled beneath,
S. 7, 8. (r. P.) 19. with a central furrow; margins not revolute.—Heaths.

† Anth. without appendages; leaves 4-whorled; style protruded.

3. E. *ciliáris.* Leaves ovate, glandulose, ciliated, with revolute margins;
S. 7, 8. (P.) E. I.-1. fl's in terminal, unilateral racemes.—Dorset. Cornwall. Cunnemara.

* Stam. and style exserted; fil. flattened.

4. E. *Mediterránea.* Cor. tubular, urceolate; cal. coloured; leaves 4-whorled,
S. 4. (—R.) I.-1. linear, glabrous, flat, convex above, with a central furrow beneath; anth. not glabrous at base; fl's in leafy racemes.—Mountain bogs, Cunnemara.

5 E. *vágans.* Cor. campanulate; cal. green; leaves 3-5-whorled, linear,
S. 7, 8. (R. *v.* W.) E. I.-1. glabrous; anth. gibbous at base; fl. axillary, crowded.—Heaths in Cornwall. Tramore, Waterford.

3. DABŒ'CIA. *D. Don.* St. Dabeoc's heath.

Cal. 4-cleft. Cor. ovate, ventricose; limb 4-toothed. Stam. 8, included; anth. sagittate, longer than fil. Caps. 4-celled, 4-valved; dehiscence septicidal.

D. *polifólia.* Leaves ovate; margins revolute, white, and downy be-
S. 8. (P. *v.* W.) I.-1. neath; fl's in terminal, leafy panicles.—Cunnemara, &c.

4. CALLU'NA. *Salisb.* Ling.

Sep. 4, coloured, concealing the cor., surrounded by four green bracts. Stam. 8. Caps. 4-celled; dehiscence septifragal.

C. *vulgáris.* Fl's in almost unilateral panicles; leaves small, sessile, op-
S. 6-8. (R. *v.* W.) 20. posite, with 2 spurs at base, smooth.—Heaths.

β. tomentósa. leaves hoary.

5. AZA'LEA. *L.*

Cal. 5-parted. Cor. campanulate, 5-cleft. Anth. roundish, opening longitudinally. Caps. 2 or 3-celled, 2 or 3-valved.

A. *procúmbens.* *S.* 5-6. (—R.) S.-1. Branches spreading and procumbent; leaves opposite, revolute, very smooth; fl's in terminal racemes.—Highland mountains.

6. ARBU'TUS. *L.* Strawberry-tree. Bear-berry.

Cal. deeply 5-cleft. Cor. ovate. Stam. 10. Anth. furnished at back with 2 reflexed awns. Fruit fleshy, 5-celled, many-seeded.

* Berry granular, with 5 many-seeded cells.

1. A. *Unédo.* *T.* 9, 10. (+W.) L.-1. Stems upright; bark rough; leaves elliptic-lanceolate, serrated, persistent; panicles terminal; fl's drooping.—Killarney. Bantry.

* Berry smooth, with 5, 1-seeded cells; racemes terminal.

2. A. *alpína.* *S.* 5. (W.) S.-1. Stems procumbent; leaves obovate, wrinkled, serrated, deciduous.—Mountain heaths.

2. A. *Uva-úrsi.* *S.* 6. (—R.) 6. Stems procumbent; leaves obovate, not wrinkled, shining, entire, persistent.—Dry heaths.

7. ANDRO'MEDA. *L.* Wild-rosemary.

Fruit capsular, dry, 4 or 5-celled; dehiscence loculicidal; otherwise as *Arbutus.*

1. A. *polifólia.* *S.* 6, 7. (—R.) 3. Leaves persistent, alternate, lanceolate, glaucous beneath, with revolute margins; fl's drooping, in short, terminal, umbellate racemes.—Bogs.

8. PHYLLODO'CE. *Salisb.*

Cal. 5-parted. Cor. urceolate, 5-toothed. Stam. 10; fil. slender; cells of anth. short, truncate. Stigma with 5 tubercles. Caps. 5-celled, septicidal.

1. P. *cærúlea.* *S.* 6, 7. (b. R.) S.-1. Leaves numerous, scattered, linear, denticulated; ped. glandular, hairy, terminal, aggregate, simple.—Sow of Athol, Perthshire.

Tr. III. *PYROLIDÆ. Herbs. Cor. or* 4 *of* 5 *distinct pet., or* 0. *Disk* 0. *Caps.* 5-*valved, with a central placenta. Seeds with a loose skin or wing.*

9. PY'ROLA. *L.* Winter-green.

Cal. 5-parted. Pet. 5. Style 5-lobed. Anth. 2-celled, opening by pores at the base or apex.

* Fl. solitary; anth. with 2 tubular horns; stigma radiant, 5-8-parted.

1. P. *uniflóra.* *P.* 7. (W.) S.-1. Scape with drooping fl.; leaves roundish, serrated; style short, straight.—Alpine woods.

* Fl's racemose; anth. without horns, opening by 2 pores.

† Style longer than stam.; stigma annular, with 5 points.

2. P. *rotundifólia.* *P.* 8. (W.) E. S.-7. Stam. ascending; style deflexed, curved upwards at end; leaves nearly round; sep. lanceolate.—Bushy places.

3. P. *média.* *P.* 7, 8. (r. W.) 6. Stam. inflexed; style straight, or slightly decurved; leaves nearly round; sep. ovate, acute.—Woods.

† Style shorter, or equal to stam.; stigma not annular, 5-lobed.

4. P. *minor*. *P.* 7. (—R.) — Stam. inflexed, equalling the straight, included style; fl. racemose; leaves roundish-oval, crenate.—Woods. 11.

5. P. *secúnda*. *P.* 7. (W.) — Stam. incurved, shorter than the straight, protruding style; fl. in 1-sided racemes; leaves ovate, acute, serrated.—Woods. Yorkshire. Derry. Highlands. 2.

10. MONOTRO'PA. *L.* Bird's-nest.

Cal. 4 or 5-parted. Cor. of 4 or 5 pet., each cucullate at base. Style simple. Anth. 1-celled, opening transversely.

1. M. *Hypópitys*. *P.* 6, 7. (+Y.) — Fl. clustered, drooping; lateral ones with 8 stam.; terminal one with 10; stem scaly.—Dry woods. 9.

ORDER LIX.—PLUMBAGINEÆ.

Herbs with entire, somewhat sheathing leaves, and narcotic, astringent properties. Stip. 0. Fl. in panicles or heads. Cal. 5-cleft, persistent, plaited. Cor. 5-fid, sometimes apopetalous. *Stam.* 5, *adhering to the pet.* in the apopetalous, free in the synpetalous species, opposite the pet. Ov. free, 1-celled; *ovule* 1, *inverted, pendulous from the point of a funicle, arising from the bottom of a cavity;* styles generally 5. *Fruit a stricle.* Seed 1, inverted; *embr. in axis of mealy alb.*; rad. superior.

Fl's 1-sided, on the branches of a panicled scape. . . . 1. STATICE.
Fl's in a head, with an everted, membranous bract at base. . 2. ARMERIA.

1. STA'TICE. *L.* Sea-lavender.

Fl's in one-sided spikes, which are panicled, surrounded by scarious scales. Cal. funnel-shaped, dry, membranous.

* Leaves spathulate, mucronate below the apex, narrowing below into a 3-ribbed stalk.

1. S. *spathuláta*. *P.* 7, 8. (r. B.) — Scape branching from a little below the middle branches, divided; panicles ascending; sep. blunt, entire.—Rocky shores. 1.

2. S. *reticuláta*. *P.* 7. (—R.) E.-1. — Scape branching from the base; branches much divided; panicles ascending; sep. obtuse, denticulate.—Salt marshes, Norfolk.

* Leaves elliptic-oblong, stalked, mucronate, 1-ribbed,

3. S. *Limónium*. *P.* 7, 8. (r. B.) — strongly ribbed; scape branched above the middle; branches much divided, corymbose, curved outwards; outer bracts large, obtuse.—Salt marshes. 6.

4. S. *rariflóra*. *P.* 7, 8. (—R.) E. S.-1. — Leaves faintly ribbed; scape branched from below the middle; branches divided, ascending, or in curved; outer bracts small, acute.—Sea-coast.

2. ARME'RIA. *Willd.* Thrift.

Fl's collected in rounded heads with an everted, cylindrical sheath at base. In other respects as *Statice*.

1. A. *marítima.* Leaves linear, 1-ribbed; outer bracts of invol. obtuse,
P. 7, 8. (—R.) 20. shortly mucronate; cal.-teeth acute.—Sea-cliffs.
2. A. *plantagínea.* Leaves linear-lanceolate, 3-5-ribbed; outer bracts of invol.
P. 6, 7. (—P.) C. cuspidate; cal.-teeth setaceous.—Sandy places.

ORDER LX.—PLANTAGINEÆ.

Innocuous herbs mostly with radical, tufted leaves. *Fl.* seldom diclinous, *in spikes, rarely solitary.* Cal. 4, rarely 5-parted, imbricated, persistent. Cor. 4-parted, regular, scarious. *Stam.* 4, *inserted on and alternating with segments of cor.*; fil. filiform, doubled upwards in æstivation; anth. versatile, 2-celled. *Style* 1; stigma hispid. *Caps. membranous, opening transversely; placenta central, winged,* bearing 1, 2, or many seeds; seeds sessile, peltate, or erect. *Embr.* lying across the hilum, *in axis of fleshy alb.*; rad. inferior.

Fl's perfect, in cylindrical or ovate spikes. . . .	1. PLANTAGO.
Fl's monœcious, solitary, or in pairs.	2. LITTORELLA.

1. PLANTA'GO. *L.* Plantain.

Fl's perfect, spiked. Cal. 4-cleft. Cor. 4-cleft, with reflexed segments. Stam. 4, very long. Caps. 2-4-celled, 2-4-seeded.

* Leaves pinnatifid, or toothed; lateral sep. with a ciliated, winged midrib.
1. P. *Coronópus.* Scape rounded; spike slender; placenta 4-winged, dividing
P. 6, 7. (—Br.) 19. the ov. into 4, spurious, 1-seeded cells.—Sandy places.
* Leaves undivided, entire,
† [1] linear, grooved, fleshy, woolly at base; scape terate.
2. P. *marítima.* Bracts ovate, acuminate; sep. not winged at back; tube
P. 6-9. (—Br.) 13. of cor. pubescent; seeds 2.—Sea-coast.
† [2] Leaves lanceolate, attenuated at both ends, 5-ribbed, (3-ribbed, 3 γ.)
3. P. *lanceoláta.* Scape furrowed, angular; bracts ovate or cuspidate; tube
P. 6, 7. (—Br.) 20. of cor. glabrous; seeds 2.—Pastures.
β. *altíssima.* leaves and the terate scapes very long.
γ. *sphærostáchya.* spike globose; leaves linear-lanceolate, 3-ribbed.
† [2] Leaves ovate,
4. R. *májor.* almost smooth, on longish, channelled stalks; sep. with a
P. 6-9. (—Br.) 20. prominent, dorsal rib; seeds 2.—Meadows.
β. *microstáchya.* spike about 6-fl'd; scape shorter than leaves.
5. P. *média.* Leaves pubescent, on broad, short stalks; sep. without a
P. 6-9. (—Br.) 15. rib; seeds more than 2.—Waste places.

2. LITTORE'LLA. *L.* Shore-weed.

Monœcious. *Barren fl's:*—Sep. 4. Cor. 4-fid. Stam 4, very long. *Fertile fl's:*—Sep. 3. Cor. urceolate. Style long. Caps. 1-seeded.

L. *lacústris.* Leaves all radical, semicylindrical, fleshy; sterile fl's soli-
P. 6, 7. (W.) 16. tary, rarely 2, on a scape; fertile fl. sessile, in axils of the leaves.—Watery places.

ORDER LXI.—PRIMULEÆ.

Herbs, rarely shrubs, often with acrid, sedative, or tonic qualities. Leaves exstipulate. Cal. superior, (half-inferior in *Samolus*.) Cor. regular, staminiferous, the limb 4, 5 or 7-cleft, (none in *Glaux*.) *Stam.* equal in number, and *opposite the segments of* cor. Ov. 1-celled; *style* 1; stigma capitate. Fruit a *caps.*, opening with valves, or with a transverse incision. *Placenta central. Seeds numerous, peltate; embr. included in a fleshy alb.*, and lying across the hilum.

- * Ov. half inferior. Cal. with a 5-cleft limb. . . . . 1. SAMOLUS.
- * Ov. wholly superior.
  - † [1] Cor. 0. Cal. coloured, 5-parted. . . . . 2. GLAUX.
  - † [2] Cor. 4-cleft, with an inflated tube. . . . . 3. CENTUNCULUS.
  - † [3] Cor. with a 5-parted limb,
    - ‡ rotate, without a tube.
      - Fl's axillary, solitary. . . . . 5. ANAGALLIS.
      - Fl's in panicles or racemes. . . . . 6. LYSIMACHIA.
    - ‡ Cor. not rotate. Stam. included in its tube.
      - § Limb of cor. reflexed. . . . . 7. CYCLAMEN.
      - § Limb of cor. flat or concave.
        - Cal. tubular, 5-toothed. . . . . 8. PRIMULA.
        - Cal. deeply 5-cleft. . . . . 9. HOTTONIA.
  - † [4] Cor. 7-parted, rotate. . . . . 4. TRIENTALIS.

1. SA'MOLUS. *L.* Brook-weed.

Cal. 5-cleft, its tube adhering to the lower half of ov. Cor. salver-shaped, its tube short, with 5 scales at its mouth. Caps. 5-valved, many-seeded.

1. S. *Valerándi.* *P.* 7, 8. (W.) 17. Leaves obovate, or roundish, obtuse, upper ones acuminate; stem erect, racemose, many-fl'd; bracts small.—Wet places.

2. GLAUX. *L.* Sea Milk-wort.

Cal. free, campanulate, coloured, 5-lobed. Stam. alternate with its lobes. Cor. 0. Caps. globose, 1-celled, 5-valved, 5-10-seeded.

G. *marítima.* *P.* 7, 8. (—R.) 12. Stem mostly procumbent; leaves opposite, ovate, glabrous, fleshy, entire, sessile; fl's sessile, axillary.—Near the sea.

3. CENTU'NCULUS. *L.* Chaff-weed. Bastard pimpernel.

Cal. tubular, 4-parted. Cor. 4-cleft, with an inflated tube. Stam. 4. Fruit a many-seeded pyxidium.

1. C. *mínimus.* *A.* 6, 7. (—R.) 10. Fl. sessile; cor. without glands at base; leaves ovate, alternate, acute; plant very small.—Damp places.

4. TRIENTA'LIS. *L.* Chickweed-wintergreen.

Cal. 7-parted. Cor. rotate, 7-parted. Stam. 7. Fruit fleshy, opening with 5 revolute, fugaceous valves.

1. T. *Europæ'a.* *P.* 6. (W.) E. S.-4. Leaves oblong-obovate; fl's obtuse, on slender stalks; stem with the leaves mostly at its summit.—Woods.

5. ANAGA'LLIS. *L.* Pimpernel.

Cal. 5-parted. Cor. rotate, 5-parted. Stam. hairy. Fruit a pyxidium.

1. A. *arvénsis.* — Leaves sessile, dotted beneath, ovate; cor. rotate; fil. distinct; pet. about equal to cal., minutely notched, fringed with glandular hairs.—Corn-fields.
A. 6, 7. (y. R.) 20.
β. *cærúlea.* — pet. blue, strongly notched, without glandular hairs.
γ. *pállida.* — cor. white, with a pink centre.
2. A. *tenélla.* — Leaves stalked, not dotted, roundish; cor. funnel-shaped; fil. connected below; pet. much longer than cal. entire, not fringed.—Bogs.
A. 7, 8. (—R.) 19.

6. LYSIMA'CHIA. *L.* Money-wort.

Cal. 5-parted. Cor. rotate, 5-parted. Stam. not hairy. Caps. 5-10-valved.

* Flowers in stalked clusters; stem upright.

1. L. *vulgáris.* — Panicles terminal, many-fl'd; leaves ovate-lanceolate, opposite, or 3 or 4 in a whorl; fil. combined in their lower half.—Damp places.
P. 7. (Y.) 17.
2. L. *thyrsiflóra.* — Racemes axillary, densely fl'd; leaves lanceolate, opposite; fil. combined in a ring at base.—Marshes.
P. 6, 7. (Y.) E. S. 7.

* Fl's solitary, axillary; stem prostrate.

3. L. *Nummulária.* — Fil. glandular, connected at base; sep. ovate, acute; leaves ovate, cordate, obtuse, shorter than ped.—Shady pastures.
P. 6, 7. (Y.) 15.
4. L. *némorum.* — Fil. smooth, distinct; sep. linear-subulate; leaves ovate, acute, shorter than ped.—Shady places.
P. 6-8. (Y.) 20.

7. CY'CLAMEN. *L.* Sow-bread.

Cal. campanulate, half-5-cleft. Cor. with a short tube, and 5-parted, reflexed limb. Anth. 5, sessile, included. Caps. many-seeded, opening with 5 teeth.

1. C. *hederæfólium.** — Leaves cordate, angular, finely toothed, their ribs and footstalks roughish; scapes finally twisting downwards.—Suffolk. Kent.
P. 4 & 10. (r. W.) E.-1.

8. PRI'MULA. *L.* Primrose. Cowslip. Oxlip.

Cal. tubular, 5-toothed. Cor. salver-shaped, with a cylindrical tube wider at the mouth where the stam. are inserted. Caps. opening with 10 teeth.

* Leaves wrinkled.

† Limb of cor. flat; scape single-fl'd, (except 1 P. β.)

1. P. *vulgáris.* — Leaves oblong-ovate, crenate; cal. tubular, with linear-lanceolate, attenuated, very acute teeth; fl's erect.—Woods.
P. 4, 5. (—Y.) 29.
β. *umbelláta.* — scapes umbellate.
γ. *intermédia.*

† Limb of cor. concave (rarely flat as in 2 P.); scapes umbelliferous. Leaves ovate, contracted below, crenate or dentate.

2. P. *Elátior.* — Cal. tubular, its teeth lanceolate, acute; fl's erect; limb of cor. flat, with oblong-obcordate, or nearly square segments.—Woods.
P. 4, 5. (Y.) E.-?

3. P. *véris.* Cal. swollen, with short, ovate teeth; fl's nodding; limb
P. 4, 5. (—Y.) 20. of cor. concave, the segments obcordate.—Meadows.
β. *major.*

* Leaves even, obovate-lanceolate, mealy. Limb of cor. flat.

4. P. *farinósa.* Stigma undivided; cal.-teeth linear; segments of cor. as
P. 6, 7. (—P.) E. S.-3. long as tube.—Hills.

5. P. *Scótica.* Stigma 5-lobed; cal.-teeth short, ovate, obtuse; segments
P. 6, 7. (P.) S.-2. of cor. half as long as tube.—Sea-shores.

9. HOTTO'NIA. *L.* Water-violet.

Cal. 5-parted to the base. Cor. salver-shaped, with a short tube. Caps. opening with 5 teeth.

1. H. *palústris.* Fl's whorled, on a long, solitary cylindrical stalk; cor.
P. 5, 6. (—P.) E. I.-9. longer than cal.; leaves submersed pectinated.—Ponds.

ORDER LXII.—OLEINEÆ.

Trees or shrubs, possessing tonic, febrifugal qualities, and often yielding a sweet, concrete, aperient substance, *Manna.* Racemes or panicles terminal or axillary. Fl's sometimes diclinous. Cal. persistent, synsepalous. *Cor.* 4-*cleft*, rarely 0; æstivation valvate. *Stam.* 2 *or* 4, *inserted on cor.*; anth. 2-celled, opening longitudinally. *Ov.* 2-*celled;* ovules in pairs, pendulous. Stigma entire, or lobed. Fruit fleshy, or capsular, or a samar, often by abortion 1-seeded; *placentæ axile. Alb. dense, fleshy;* embr. straight; rad. superior; plumule inconspicuous.

Cor. 0. Cal. 4-cleft, or 0.	Fruit a samar.	. . .	1. FRAXINUS.
Cor. 4-cleft.	Fruit fleshy.	. . . . .	2. LIGUSTRUM.

1. FRA'XINUS. *L.* Ash.

Cor. 0. Cal. 4-cleft, or 0. Stam. 2 or 0. Fruit dry, a pendulous samar, of 1 or 2 1-seeded cells.

1. F. *excélsior.* Leaves all $4\frac{1}{2}$-$8\frac{1}{2}$-pinnate; leafl. nearly sessile, ovate-lan-
T. 4, 5. (W.) 20. ceolate, acuminate, serrated; cal. 0.
β. *Heterophýlla.* some of the leaves simple.

2. LIGU'STRUM. *L.* Privet.

Cor. 4-cleft, funnel-shaped. Stam. 2. Fruit fleshy, containing 2 membranous, 1-seeded cells.

1. L. *vulgáre.* Leaves elliptic-lanceolate, entire, glabrous, obtuse, but with
S. 6, 7. (W.) 17. a small point; panicles terminal, dense.—Hedges.

ORDER LXIII.—SOLANEÆ.

Herbs or shrubs, with alternate undivided, or lobed leaves, sometimes opposite and beneath the flowers, with narcotic, acrid, and poisonous properties. Cal. 5, rarely 4-parted, persistent. *Cor. staminiferous, regular,* the limb 5, rarely 4-cleft, deciduous, with a plicate, imbricate, or valvate æstivation; *stam. as many as its segments.* Ov.

2-celled, of 2 carpels right and left of axis. Style and stigma simple. *Fruit* 2-4-*celled*, a caps. with a double dissepiment parallel with the valves, or a berry with *the placentæ adhering to the axis.* Seeds indefinite. *Embr. usually curved, in a fleshy alb.*; rad. next hilum.

* [1] Cor. rotate. Anth. erect, opening by terminal pores.	. .	1. SOLANUM.
* [2] Cor. campanulate. Anth. not opening by pores.	. .	2. ATROPA.
* [3] Cor. funnel-shaped. Anth. not opening by pores.		
Stigma capitate. Caps. 2-celled, opening by a lid.	. .	3. HYOSCYAMUS.
Stigm 2-lobed. Caps. 4-celled, 4-valved.	. . .	4. DATURA.

1. SOLA'NUM. *L.* Nightshade.

Cal. of 5-10 segments. Cor. rotate. Anth. opening by 2 pores at end. Fruit fleshy, roundish, 2 or more-celled.

1. S. *Dulcamára.* *S.* 6, 7. (P.)	20.	Stem woody, unarmed, zigzag, climbing; leaves cordate-ovate, upper ones hastate or auricled; ped. opposite leaves; berries ovate.—Hedges.
β. tomentósum.		downy, with patent hairs.
γ. marínum.		young branches and leaves fleshy, mostly pubescent, incurved upwards; leaves cordate.—Sea-beech.
2. S. *nígrum.* *A.* 6-9. (W.)	14.	Stem herbaceous, unarmed; leaves ovate, obtusely toothed, wavy; ped. not opposite leaves; berries globose.—Waste ground.
β. miniátum.		angles of stem tuberculated; leaves sinuate.

2. A'TROPA. *L.* Dwale. Deadly-nightshade.

Cal. 5-parted. Cor. campanulate, with a short tube, equally 5-lobed. Stam. distant above. Fruit globose, fleshy, 2-celled.

1. A. *Belladónna.* *P.* 6-8. (g. P.)	13.	Stem herbaceous; leaves ovate, entire; fl's axillary, solitary, on short ped.—Shady places.

3. HYOSCY'AMUS. *L.* Henbane.

Cal. tubular, 5-cleft. Cor. funnel-shaped, with 5 slightly unequal, obtuse lobes. Stigma capitate. Caps. 2-celled, opening with a lid.

1. H. *níger.* *A. B.* 7. (W.)	19.	Leaves oblong, sinuate, sessile, clasping, lower stalked; fl's nearly sessile, axillary, unilateral.—Waste places.

4. DATU'RA. *L.* Thorn-apple.

Cal. tubular, deciduous. Cor. funnel-shaped, plaited, 5-lobed. Stigma 2-lobed. Caps. 4-valved, with 2, partially bi-parted cells.

1. D. *Stramónium.** *A.* 7. (W.)	3.	Herbaceous; leaves unequally sinuate-dentate, ovate, smooth; fruit spinous, ovate, erect.—Waste ground.

ORDER LXIV.—CONVOLVULEÆ.

Mostly smooth, climbing herbs or shrubs, with an acrid, purgative, milky juice. Cal. 5 or 4-cleft, *imbricated.* *Cor. regular*, the limb 5-lobed, or 5-cleft, *plaited.* *Stam.* 5, *on cor.* Ov. 2 or 4-celled; style 1, divided or lobed at summit, or as many as

cells of ov. *Fruit* capsular, rarely baccate, *with* 1-4, 1 or 2-*seeded cells*, opening by valves separating from the angles of a loose dissepiment; *placentæ basal. Embr. in a small quantity of mucilaginous alb.*

Leaves alternate.	1. CONVOLVULUS.
Leaves 0.	2. CUSCUTA.

Tr. I. *CONVOLVULIDÆ. Leaves alternate, simple. Ped. mostly* 1-*fl'd, axillary or terminal with* 2 *bracts. Embr. curved, with leafy, shrivelled cot.*

1. CONVO'LVULUS. *L.* Bind-weed.

Cal. 5-cleft. Cor. campanulate, plaited, with 5 shallow lobes. Style simple; stigmas 2. Caps. 1, 3 or 4-celled; cells 1 or 2-seeded.

1. C. *arvénsis.* *P.* 6-8. (—R. ‖ W.) 20. — Climbing; leaves sagittate, with acute lobes; ped. mostly 1-fl'd; bracts minute, distant from fl's.—Hedges.
   β. *hirtus.* — stem and leaves downy.
2. C. *Sépium.* *P.* 7, 8. (W.) 19. — Climbing; leaves sagittate, with truncate lobes; ped. 1-fl'd, square; bracts large, cordate, close to the fl's.—Hedges.
3. C. *Soldanélla.* *P.* 4-8. (—R. ‖ Y.) 5. — Prostrate; leaves reniform, fleshy; ped. 1-fl'd, with 4 winged angles; bracts ovate, close to fl.—Sea-shore.

Tr. II. *CUSCUTIDÆ. Leafless, climbing parasites. Fl. densely clustered. Embr. spiral, without cot.*

2. CUSCU'TA. *L.* Dodder.

Cal. 4 or 5-cleft. Cor. 4 or 5-lobed. Styles 2. Caps. opening transversely at base.

* Cor. becoming ventricose, the scales adpressed to its tube; styles included.

1. C. *Europæ'a.* *A.* 8, 9. (r.—Y.) 10. — Fl's more than 5 in a cluster; scales of cor. bifid; cal. close-pressed, much shorter than the cor.—On herbs.
2. C. *Epilinum.** *A.* 8. (W.) E. S.-1. — Fl. about 5 in a cluster; scales of cor. palmately cut; cal. with spreading, fleshy segments, nearly as long as tube of cor.—On *flax.*

* Cor. cylindrical, the scales convergiug, palmately cut; styles exserted.

3. C. *Epithýmum.* *A.* 7-9. (W.) E. S.-11. — Heads many-fl'd; cal. much shorter than tube of cor.; sep. rhomboidal-ovate, apiculate, unequal, reddish.—On shrubs.
4. C. *Trifóli.* *A*, 7-9. (W.) ? — Sep. ovate-lanceolate, acute, whitish, nearly as long as tube of cor.; in other respects as last.—On *clover.*

ORDER LXV.—POLEMONIEÆ.

Herbs with mostly opposite leaves, and mucilaginous, bitter properties. Cal. 5-parted, persistent. *Cor. regular*, 5-lobed. *Stam.* 5, *inserted on cor.* Ov. 3-celled; *placentæ axile;* style simple; stigma trifid. Caps. 3-*celled*, 3-valved, few or many-seeded; dehiscence loculicidal or septicidal, separating from the axis. *Embr. straight, in axis of a large, horny alb.*; rad. inferior.

1. POLEMO'NIUM. *L.* Greek-valerian.

Cor. rotate, with a short tube, the throat nearly closed by the dilated base of fil.

1. P. *cœrúleum.* *P.* 7. (B.) 5. — Leaves pinnate, glabrous; leafl. oblong-lanceolate. acuminate; stem angular; panicle downy.—Bushy hills.

ORDER LXVI.—BORAGINEÆ.

Innocuous herbs or shrubs, rarely with square stems. Leaves alternate, usually covered with asperities. Infl. in 1-sided, gyrate spikes or racemes, rarely solitary and axillary. *Fl's* mostly 5-nate, *rarely irregular*, imbricate, rarely twisted in æstivation. Stam. *inserted on*, and as many as lobes of cor., rarely unequal in length. Ov. 4-parted, 4-seeded. Style arising from the base of lobes of ov.; stigma simple or bifid. *Fruit of* 2 *or* 4-*nuts*. Seeds solitary; *alb.* 0; rad. superior.

- * Throat of cor. closed with scales.
  - † Stam. included within the tube.
    - ‡ [1] Cor. cylindrical-campanulate. . . . . 3. SYMPHYTUM.
    - ‡ [2] Cor. funnel-shaped, (in *Anchusa* 2, almost salver-shaped), imbricate in æstivation.
      - § Fl's axillary, solitary. . . . . 1. ASPERUGO.
      - ¶ Fl's racemose, or spiked.
        - ‖ Tube of cor. bent; limb oblique. . . 6. LYCOPSIS.
        - ‖ Tube of cor. straight.
          - Cal. 5-cleft. Nuts fixed to base of style. 2. CYNOGLOSSUM.
          - Cal. 5-fid. Nuts free from style. . 4. ANCHUSA.
    - ‡ [3] Cor. salver-shaped, twisted in æstivation. . . 5. MYOSOTIS.
  - † Stam. exserted. Cor. rotate. . . . . 7. BORAGO.
- * Throat of cor. without scales, or these very minute.
  - † Segments of cor. unequal. . . . . 8. ECHIUM.
  - † Segments of cor. equal.
    - ‡ Stam. included; fil. short.
      - Cal. tubular, 5-fid. . . . . 9. PULMONARIA.
      - Cal. in 5 deep segments. . . . . 10. LITHOSPERMUM.
    - ‡ Stam. exserted; fil. long. . . . . 11. STEREHAMMERA.

Tr. I. *CYNOGLOSSIDÆ. Nuts attached to persistent style.*

1. ASPERU'GO. *L.* Mad-wort.

Cal. 5-cleft, with alternate smaller teeth, folded and compressed in fruit. Cor. short, funnel-shaped, its mouth with convex, connivent scales.

A. *procúmbens.* *A.* 6, 7. (B.) E. S.-6. — Stem procumbent, angular, bristly; leaves oblong, hispid; lower stalked; upper sessile.—Waste places.

2. CYNOGLO'SSUM. *L.* Hound's-tongue.

Cal. 5-cleft. Cor. short, funnel-shaped, with convex, blunt scales in throat. Stigma emarginate. Nuts depressed.

1. C. *officinále.* *B.* 6, 7. (+R.) 16. — Leaves downy, acute, those of the stem lanceolate, attenuate at base, sessile, lowest elliptical, on long stalks.—Waste ground.
2. C. *sylváticum.* *B.* 6, 7. (b. R.) 4. — Leaves nearly glabrous and shining above, scabrous beneath, those of the stem lanceolate, broad at base, sessile, lowest ovate-lanceolate, on long stalks.—Shady places.

Tr. II. *ANCHUSIDÆ. Nuts attached to an hypogynous disk.*

3. SY'MPHYTUM. *L.* Comfrey.

Cal. 5-cleft, or parted. Cor. cylindrical-campanulate; tube short, its mouth closed with connivent, subulate scales.

1. S. *officinále.* Stem winged above by the very decurrent bases of the
P. 5, 6. (—Y.) 18. ovate-lanceolate leaves.—Damp places.
β. pátens. cal.-segments spreading.
2. S. *tuberósum.* Stem scarcely winged; leaves ovate-oblong, attenuated
P. 6, 7. (—Y.) 8. below, upper slightly decurrent.—Damp places.

4. ANCHU'SA. *L.* Alkanet.

Cal. 5-fid. Cor. funnel-shaped, with a straight tube, and convex, connivent scales in throat. Nuts concave at base.

1. A. *officinális.** Leaves lanceolate; spikes crowded, unilateral; cal.-seg-
P. 6, 7. (+P.) E.-2. ments bluntish, hairy within and without. — Waste ground.
2. A. *sempervírens.** Leaves ovate; ped. axillary, bearing 2 dense spikes, with
P. 5-8. (B.) 11. an intermediate flower; cal.-segments not hairy within. —Waste ground.

5. MYOSO'TIS. *L.* Scorpion-grass.

Cal. 5-cleft, or toothed. Cor. salver-shaped; lobes obtuse, twisted in æstivation, the mouth half closed, with short, round scales.

* [1] Limb of cor. flat, longer than tube; ped. longer than cal.
† Cal. with short, triangular teeth, open in fruit, with straight
1. M. *palústris.* adpressed bristles; stem with a spreading pubescence;
P. 6-8. (B.) 16. leaves bluntish, apiculate; pet. emarginate.—Ditches.
† Cal. deeply cleft, with long, lanceolate teeth.
2. M. *répens.* Bristles of cal. straight, adpressed, its teeth acute, mostly
P. 6-8. (B.) 3. connivent in fruit; pubescence of stem spreading.—Bogs.
3. M. *suavéolens.* Bristles of cal. straight, with a few curved, adpressed, its
P. 6-8. (B.) S.-1. teeth bluntish; lower leaves on long stalks, pointed.—Breadalbane Mountains.
4. M. *sylvática.* Bristles of cal. hooked, spreading, its teeth closed in fruit;
P. 6, 7. (B.) 10. lower leaves on short, dilated stalks, bluntish.—Shady places.
* [2] Limb of cor. concave, equalling its tube.
5. M. *cæspitósa.* Cal. with straight, adpressed bristles, open in fruit, shorter
B. ? 6-8. (B.) 8. than ped.; leaves obtuse.—Wet places.
6. M. *arvénsis.* Cal. with hooked, spreading bristles, closed in fruit, shorter
P. 6-8. (B.) 20. than ped.; leaves acute.—Hedge banks.
* [3] Limb of cor. concave, shorter than its tube.
7. M. *collína.* Cal. open and ventricose in fruit, equalling the divergent
A. 4, 5. (B.) 10. ped., its tube with hooked bristles.—Dry banks.
8. M. *versícolor.* Cal. closed, and oblong in fruit, longer than the ascending
A. 5, 6. (B.) 17. ped.; bristles of tube hooked, spreading.—Banks.

6. LYCO'PSIS. *L.* Bugloss.

Cal. deeply 5-cleft. Cor. with a curved tube; limb oblique.

1. L. *arvénsis.* Plant very bristly; leaves lanceolate, repando-denticulate,
A. 6, 7. (B.) 20. wavy; cal. erect.—Corn-fields.

7. BORA'GO. *L.* Borage.

Cal. 5-parted. Cor. rotate, 5-cleft, its mouth closed, with 5 obtuse, emarginate scales. Nuts wrinkled.

1. B. *officinális.** *B.* 6, 7. (B.) 12. Lower leaves obovate, attenuated at base; segments of cor. ovate, acute, spreading.—In rubbish.

8. E'CHIUM. *L.* Viper's-bugloss.

Cal. in 5 deep segments. Cor. irregular, its throat dilated, without scales. Stigma deeply cloven.

1. E. *violáceum.* *B.* 6-9. (p. B.) C. Stem erect, branched, diffuse, pilose-hispid; lower leaves ovate-oblong, stalked, upper oblong, cordate; spikes panicled.—Dry, sandy places.
2. E. *vulgáre.* *B.* 6, 7. (B.) 19. Stem simple, hispid, with tubercles; leaves lanceolate, 1-ribbed, upper narrowed at base; spikes short, lateral, 1-sided.—Dry places.

9. PULMONA'RIA. *L.* Lungwort.

Cal. tubular, 5-fid. Cor. funnel-shaped, its throat naked, or nearly so. Stam. included. Nuts stony, attached by their truncate, flat base, with a central tubercle.

1. P. *officinális.* *P.* 5. (P.) E. S.-6. Leaves scabrous, often spotted, ovate, roundish or cordate, stalked; upper ovate, sessile.—Woods.
   β. *angustifólia.* leaves seldom spotted, all lanceolate.

10. LITHOSPE'RMUM. *L.* Gromwell.

Cal in 5, deep segments. Cor. funnel-shaped, its throat naked, or with very minute scales. Stam. included. Nuts stony, attached by their truncate, flat base.

1. L. *arvénse.* *A.* 5-7. (W.) 20. Stem erect, branched; leaves lanceolate, acute, hispid, with adpressed, tubercular hairs above and below; cor. a little longer than cal., with minute scales in throat.—Corn-fields.
2. L. *officinále.* *P.* 6-8. (—Y.) 18. Stem erect, branched; leaves lanceolate, acute, veined, bristly, tubercular above, hairy beneath; tube of cor. as long as cal., its throat naked.—Dry, stony places.
3. L. *purpuro-cærúleum.* *P.* 5-7. (B.) E.-1. Barren stem prostrate, creeping; leaves lanceolate, acute, hispid and tubercular above; cor. much longer than cal., its throat naked.—Thickets.

11. STEENHA'MMERA. *Reich.*

Cal. in 5, deep segments. Cor. campanulate, with a short, thick tube, and 5 protuberances in throat. Stam. protruded beyond the throat. Nuts rather drupaceous, attached laterally near the base, by a flat surface.

1. S. *marítima.* *P.* 5, 6. (p. B.) 6. Stems procumbent, branched; leaves ovate, glaucous, fleshy, rough with callous dots, upper lanceolate.—Gravelly coast.

ORDER LXVII.—MENTHEÆ.

Aromatic, innocuous herbs, or under-shrubs, with 4-angled stems, and opposite branches. Leaves opposite, exstipulate, with receptacles of oil. Cal. tubular, regularly 5 or 10-toothed, bilabiate or irregularly 3-10-toothed. *Cor. bilabiate, or slightly unequal. Stam.* 4, *didynamous, the* 2 *upper sometimes wanting.* Ov. deeply 4-lobed, each lobe with 1 erect ovule; style 1, arising from the base of ovary; stigma bifid. *Fruit of* 4 *small,* 1-*seeded nuts,* enclosed in the persistent cal. *Embr. erect; alb.* 0.

- * Upper lip of cor. very minute or apparently 0, of 2 shallow lobes. . . . . 1. AJUGA.
  - Upper lip of cor. deeply cleft. . . . . 2. TEUCRIUM.
- * Cor. 2-lipped, or nearly equally cleft.
  - † Stam. 2.
    - Cal. 2-lipped. Cor. 2-lipped. . . . . 3. SALVIA.
    - Cal. 5-cleft. Cor. nearly equally 4-cleft. . . 4. LYCOPUS.
  - † Stam. 4,
    - ‡ 1 nearly equal, distant. Cor. nearly equal. . . 5. MENTHA.
    - ‡ 2 Upper stam. longer than lower. Cor. 2-lipped. . 6. NEPETA.
    - ‡ 3 Upper stam. shorter than lower.
      - § Cor. nearly equally 4-cleft.
        - ‖ Cal. equally 5-toothed. . . . . 7. ORIGANUM.
        - ‖ Cal. 2-lipped,
          - lower middle lobe of cor. entire, acute. . 8. THYMUS.
          - Lower lobe of cor. emarginate. . . 9. CALAMINTHA.
      - § Cor. bilabiate,
        - ‖ its upper lip flat.
          - ¶ Cal. with 3-5, broad lobes. . . 10. MELLITIS.
          - ¶ Cal. 5-10-toothed.
            - Stam. longer than tube of cor. . 11. LEONURUS.
            - Stam. shorter than tube of cor. . 12. MARRUBIUM.
        - ‖ Upper lip of cor. concave or arched.
          - ¶ Cal. 5-toothed, not 2-lipped.
            - ** Lower lip of cor. of 1 large lobe, and 2 or more, or obsolete lateral teeth. . . . } 13. LAMIUM.
            - ** Lower lip of cor. of 3 unequal lobes,
              - †† having 2 scales on the upper surface. . } 14. GALEOPSIS.
              - †† Lower lip of cor. without scales.
                - Lower lip of cor. 3-fid, the middle segment the largest and obcordate. . . } 15. BALLOTA.
                - Lower lip of cor. of 3 nearly equal, entire lobes. Cal. 5-ribbed. Anth. approaching. . . } 16. GALEOBDOLON.
                - Lower lip of cor. of 3 unequal lobes. Cal. 10-ribbed. Stam. at length diverging. . } 17. STACHYS.
          - ¶ Cal. 2-lipped. Upper lip of cor. concave.
            - Fil. with a horn beneath the anth. Upper lip of cal. without a scale, 3-toothed; lower bifid. . . } 18. PRUNELLA.
            - Fil. simple. Lips of cal. entire, the upper bearing a small scale. . } 19. SCUTELLATA.
            - Fil. simple; upper lip of cal. 3-toothed, without a scale. . . . } 20. MELISSA.

Tr. I. *AJUGOIDÆ.* *Cor. with the upper lip very short, or apparently wanting, 2-lobed, or deeply cleft. Stam. much exserted.*

1. A'JUGA. *L.* Bugle.

Cal. 5-cleft, nearly equal. Upper lip. of cor. emarginate; lower 3-lobed. Stam. parallel, ascending.

* Fl. solitary, axillary; stem branching.
1. A. *Chamæ'pitys.* Leaves 3-cleft, with linear, entire segments; the lowest
A. 5-7. (Y. ∴ R.) E.-4. undivided, toothed.—Sandy fields. Kent, Essex.
* Fl. whorled; stem solitary.
† Stem-leaves stalked; scions 0; whorls distant.
2. A. *alpína.* Floral leaves 3-lobed, the upper entire; stem-leaves ovate-
P. 7. (B.) E. I.-2. lanceolate, toothed, serrate.—Mountains.
† Stem-leaves sessile.
3. A. *réptans.* Scions creeping; upper whorls crowded; leaves obovate,
P. 5, 6. (B. *v.* b. R.) 20. crenulated or entire.—Wet places.
4. A. *pyramidális.* Scions 0; all the whorls crowded; leaves crenulated, or
A. 6. (B.) S.-3. entire.—Highland mountains.

2. TEU'CRIUM. *L.* Germander.

Cal. nearly equally 5-toothed, or 2-lipped. Upper lip of cor. deeply bifid; lower 3-fid. Stam. parallel, between the fissure of the upper lip.

* [1] Leaves divided,
1. T. *Botrys.* bi-pinnatifid and cut into several narrow segments; fl's
A. 8, 9. (R.) E.-1. few, 3, axillary, not whorled.—Boxhill, Surrey.
* [2] Leaves undivided, stalked, serrated, hairy.
2. T. *Scorodónia.* Fl's in 1-sided, lateral racemes; leaves oblong-ovate, with
P. 7, 8. (—Y.) 20. a cordate base, crenate-serrate, wrinkled.—Woods.
β. *dentátum.* leaves oblong, truncate below, coarsely toothed.
3. T. *Chamæ'drys.** Fl's in whorls of about 6; leaves ovate, tapering at
P. 7. (r. P.) 4. base into a short foot-stalk, deeply crenate, cut, plane.—Dry places.
* [2] Leaves undivided, sessile.
4. T. *scórdium.* Leaves oblong, attenuated below, toothed, serrated, all
P. 7, 8. (P.) E.? I.-3. alike; whorls 2-6-fl'd, distant. — Oxfordshire. Portumna-bridge.
β. *scordioides.* leaves cordate below, clasping; stem very woolly.

Tr. II. *MONARDIDÆ.* *Cor. 2-lipped. Stam. 2, fertile, parallel under the upper lip of cor.*

3. SA'LVIA. *L.* Sage or Clary.

Cal. 2-lipped. Tube of cor. dilated; upper lip of cor. galeate, concealing the stam. Fil. with 2 divaricating branches, 1 only bearing a 1-celled anth.

1. S. *verbenáca.* Cor. about twice the length of cal.; leaves oblong, obtuse,
P. 5, 6. (P.) 15. cordate, sinuate, toothed, stalked, upper short, broad, cordate, clasping.—Dry places.

β. *clandéstina.* upper leaves oblong, acute, not cordate, sessile.
2. S. *praténsis.** Leaves oblong-ovate, cordate, crenate and toothed; upper
P. 7. (B.) E.-1. small, sessile, lanceolate, acute.—Meadows.

4. LY'COPUS. *L.* Gipsey-wort.

Cal. 5-toothed, as long as the nearly equally 4-cleft cor. Stam. 2, ultimately diverging, the 2 upper wanting, or rudimentary.

1. L. *Europæ'us.* Leaves deeply serrated, or pinnatifid, ovate-oblong, gla-
P. 7, 8. (W.) 16. brous; barren stam. 0.—River banks.

Tr. III. *MENTHOIDÆ. Cor. campanulate, nearly equal. Stam.* 4, *distant, straight.*

5. ME'NTHA. *L.* Mint.

Cal. equal, 5-toothed. Cor. nearly equally 4-fid., with a short tube, the upper lobe broadest, often emarginate. Stam. 4; anth. 2-celled.

* Whorls of fl's spicate, sometimes distant from each other, but without true leaves.
† Leaves, at least on their under side, and stem hairy; spike dense towards end.
‡ Cal. hairy all over.
1. M. *rotundifólia.* Leaves sessile, elliptic, obtuse, sharply serrated; bracts
P. 8, 9. (—P.) 9. lanceolate; spikes interrupted; cor. downy. — Moist ground.
β. *velutína.* leaves cordate-elliptical, clasping, apiculate.
γ. *crispa.* leaves deeply cut, and crisped.
2. M. *sylvéstris.* Leaves nearly sessile, ovate or lanceolate, very acute, un-
P. 8, 9. (—P.) E.-8. equally serrate; bracts subulate; spikes dense.
β. *Brittíngeri.* leaves ovate-lanceolate, with a white tomentum.
‡ Base of cal. smooth, glandular; teeth hairy, lanceolate-subulate.
3. M. *piperíta.* Leaves shortly stalked, ovate-lanceolate, or oblong, ser-
P. 7, 8. (—P.) 9. rated, acute; bracts lanceolate; spikes interrupted below.—Wet places.
β. *ováta.* leaves ovate; spikes short and blunt.
† Leaves and stem smooth; spikes altogether of distant whorls.
4. M. *víridis.** Leaves lanceolate, acute, serrated; bracts setaceous, some-
P. 8. (—P.) 6. what hairy as well as tube of cal.; pedicels glabrous.—Marshy places.
β. *crispifórmis.* leaves wavy, crisped.
* Whorls in the axils of true leaves.
† The uppermost whorl terminal and capitate.
5. M. *acutifólia.* Leaves ovate-lanceolate, tapering at each end; plant pu-
P. 9. (—P.) E.-2. bescent; cal. and pedicels hairy all over.—River banks.
6. M. *aquática.* Leaves ovate, serrate, rounded, or slightly cordate below,
P. 7, 8. (P.) 20. somewhat stalked; plant pubescent; cal. and pedicels hairy; teeth triangular, subulate.—Wet places.
β. *citráta.* leaves ovate-cordate; plant glabrous.
† The uppermost whorl not terminal nor capitate.
‡ Throat of cal. closed with hairs; stem prostrate.
7. M. *Pulégium.* Leaves stalked, elliptical, downy, obtuse, sub-crenate, re-
P. 8, 9. (—P.) 9. curved; pedicels slightly, and cal. very hairy.—Wet places.

‡ Throat of cal. naked; stem upright.

§ Teeth of cal. longer than broad.

8. M. *Satíva.* P. 7, 8. (—P.) — Leaves shortly stalked, ovate or elliptical, serrate; cal. 14. tubular or campanulate; teeth lanceolate, acuminate; cal. and pedicels hairy; plant hairy.—Damp places.

β. *rúbra.* — base of cal. and pedicels smooth; plant smooth.

γ. *géntilis.* — base of cal. and pedicels smooth; plant pubescent.

§ Teeth of cal. triangular, broader than long, the tube campanulate.

9. M. *arvénsis.* P. 7-9. (P.) — Plant hairy; cal. and pedicels hairy all over; leaves somewhat stalked, all similar, ovate or elliptical, serrate, narrowed below.—Corn-fields. 20.

β. *agréstis.* — leaves cordate below.

Tr. IV. *NEPETIDÆ. Stam. approximating, parallel under upper lip of cor., the 2 lower ones shorter than the upper.*

6. NE'PETA. *L.* Cat-mint.

Cal. cylindrical, many-ribbed, its mouth a little oblique, 5-toothed. Cor. with a long tube, ringent; upper lip emarginate; lower 3-fid; lateral lobes reflexed; middle one notched.

1. N. *Glechóma.* P. 4-6. (B.) — Fl's in threes, axillary; stem creeping; leaves reniform, 20. crenate; anth. forming a cross; nuts dotted.—Banks.

β. *hirsúta.* — cal.-teeth elongated, linear-lanceolate.

2. N. *Catária.* P. 7, 8. (W.) — Fl's in dense whorls, forming a spike; stem erect; leaves 16. cordate, dentate-serrate; anth. curving outwards; nuts not dotted.—Waste places.

Tr. V. *SATUREIDÆ. Stam. 4, distant, the 2 upper shorter; anth. with the cells separated by a dilated connective.*

7. ORI'GANUM. *L.* Marjoram.

Spikes 4-sided, imbricated with bracts. Cal. cylindrical, 10-13-ribbed, 5-toothed; throat hairy in fruit. Upper lip of cor. erect, nearly flat; lower patent, 3-fid.

1. O. *vulgáre.* P. 7, 8. (P.) — Fl's in crowded, panicled heads; bracts ovate, longer than 19. cal.; leaves broadly ovate, obtuse, entire.—Dry places.

8. THY'MUS. *L.* Thyme.

Fl's whorled, or capitate. Cal. 2-lipped, 10-13-ribbed; upper lip 3-toothed; lower 2-fid; throat hairy. Upper lip of cor. erect, nearly plane; lower patent, 3-fid.

1. T. *Serpýllum.* P. 7, 8. (r. P.) — Fl's whorled, or capitate; stem branched, decumbent; 20. leaves ovate, obtuse, entire, petiolate, ciliated at base.—Dry pastures.

9. CALAMI'NTHA. *Mœnch.* Calamint.

Cal. 2-lipped, 13-nerved. Cor. with the upper lip nearly plane; lower 3-lobed, the middle one emarginate. Anth.-cells at length diverging, with a sub-triangular connective.

* Whorls on forked, many-fl'd stalks.

1. C. *Nepeta.* *P.* 7, 8. (—P. *v.* W.) E.-9. Mouth of cal. with prominent hairs; leaves ovate, obtuse, serrated, pale below, shortly stalked; nuts smooth.—Dry banks.

2. C. *officinális.* *P.* 7-9. (—P. *v.* W.) E. I.-14. Mouth of cal. with short hairs; leaves broadly ovate, rather acute, with shallow serratures, green below, on long stalks; nuts dotted.—Dry banks, Bridgewater, North Devon.

* Fl. in simple whorls of separate peduncles.

3. C. *A'cinos.* *A.* 8. (P.) 12. Whorls about 6-fl'd; leaves ovate, acute, sub-serrate, or entire, ciliated at base; cal. gibbous at base.—Dry places.

4. C. *Clinopódium.* *P.* 7, 8. (P.) 20. Whorls many-fl'd, with an invol. of many bracts: leaves ovate, obtuse, crenulated; cal. equal at base.—Dry, bushy places.

Tr. VI. *STACHYIDÆ. Stam. approximating, parallel, 2 lower longest. Cal.-teeth spreading in fruit.*

10. MELLI'TTIS. *L.* Bastard-balm.

Cal. campanulate, ample, with 3 or 4 broad lobes. Cor. twice as long as cal.; upper lip flattish, entire; lower of 3 rounded, nearly equal lobes. Stam. longer than its tube; anth. approaching and forming a cross.

M. *Melissophýllum.* *P.* 5, 6. (W. ‖ P.) E.-1. Leaves oblong, ovate, or slightly cordate; upper lip of cal. with 2-3-teeth.—Woods.

11. LEONU'RUS. *L.* Mother-wort.

Cal. tubular, teeth 5, subulate, 2 lower rather the longest. Cor. with the upper lip very hairy above, entire; lower patent, 3-fid. Stam. longer than its tube; anth.-cells nearly parallel.

1. L. *Cardíaca.* *P.* 8. (P.) 12. Whorls crowded; lower leaves palmately 3-lobed; upper entire; tube of cor. with an oblique ring.—Hedges.

12. MARRU'BIUM. *L.* White-horehound.

Cal. 10-ribbed; teeth 5-10, spreading; throat hairy. Cor. a little longer than cal.; upper lip straight, linear; lower 3-lobed, the middle lobe largest, emarginate. Stam. shorter than its tube.

1. M. *vulgáre.* *P.* 8, 9. (W.) 15. Hoary, with a white, woolly pubescence; leaves roundish-ovate, toothed, wrinkled; whorls numerous.—Waste places.

β. *ápulum.* leaves cordate at base, very woolly.

13. LA'MIUM. *L.* Dead-nettle.

Cal. campanulate, nearly equal. Cor. with an inflated throat; upper lip arched, entire; lower patent, 3-lobed, the lateral lobes reduced to 1 or 2 teeth on each side at base; tube shorter than stam.

* Tube of cor. straight; cal.-teeth longer than tube.

† Floral leaves sessile, amplexicaul, crowded, roundish or reniform, cordate, inciso-crenate, lower clasping.

1. L. *amplexicaúle.* *A.* 5-8. (R.) 20. Lateral teeth of lower lip of cor. obsolete; cal.-teeth at length connivent.—Sandy-fields.

2. L. *intermédium.* *A.* 4-6. (R.) I. S.-2. Lateral teeth of lower lip of cor. single; cal.-teeth always spreading.—Waste places. Sligo. Edinburgh.

† Floral leaves somewhat stalked, crowded, cordate, obtuse,

3. L. *incisum.* *A.* 4-6. (R.) ? inciso-serrate; lateral teeth of cor. single; cal.-teeth always spreading.—Waste ground.

* Tube of cor. turned upwards,

† and clothed internally at its lowest part with a ring of hairs.

4. L. *purpúreum.* *A.* 5-8. (—P. ∴ R.) 20. Leaves roundish-cordate, crenate-serrate, upper crowded; cal.-teeth spreading; lateral lobes of cor. with 2 teeth.—Waste ground.

† Tube of cor. naked internally; leaves cordate-ovate, acuminate, deeply serrated.

5. L. *maculátum.* *P.* 6-8. (P.) E. S. ? 1. Tube of cor. longer than cal., the 2 lower cal.-teeth widely separated from the 3 upper; lateral teeth of cor. single; lower leaves with a white, spot, cordate-ovate.—Clova. Fifeshire.

β. lævigátum. leaves spotless, triangular-cordate.

6. L. *álbum.* *P.* 5, 6. (W.) 18. Tube of cor. as long as cal., the uppermost cal.-teeth distant from the rest; lateral teeth of cor. 3.—Waste ground.

14. GALEO'BDOLON. *Huds.* Weasel-snout.

Cal. campanulate, 5-ribbed, nearly equal, 5-toothed. Upper lip of cor. incurved, arched, entire; lower smaller, in 3 nearly equal, acute lobes, its tube shorter than stam.

1. G. *lúteum.* *P.* 5, 6. (Y.) 10. Leaves ovate-acuminate, truncate at base, coarsely serrate, stalked; upper lanceolate.—Woods.

15. GALEO'PSIS. *L.* Hemp-nettle.

Cal. with 5 equal, mucronate teeth. Upper lip of cor. arched; lower with 3 unequal lobes, having 2 teeth on its upper side, its tube inflated, exserted, shorter than stam. Anth. bursting transversely.

* Stem not thickened below the joints, softly pubescent.

1. G. *Ládanum.* *A.* 8, 9. (P.) 15. Upper lip of cor. slightly crenate; leaves lanceolate, subserrate, or entire, downy on both sides.—Gravelly places.

2. G. *ochroleúca.* *A.* 7, 8. (—Y.) 3. Upper lip of cor. deeply notched; leaves ovate-lanceolate, serrated, soft and downy on both sides.—Sandy-fields.

* Stem thickened below the joints, hispid; leaves ovate, acuminate, serrate.

3. G. *Tetráhit.* *A.* 7-9. (P. *v.* W.) 20. Cor. with the upper lip erect, ovate, entire, the tube as long as the tubular cal.—Cultivated ground.

4. G. *versicólor.* *A.* 7, 8. (Y. * P.) 14. Cor. with the upper lip horizontal, inflated, the tube much longer than cal.—Cultivated ground.

16. BALLO'TA. *L.* Horehound.

Cal. funnel-shaped, with 5 equal teeth, 10-ribbed, naked within. Cor. a little longer than cal., the upper lip erect, concave; lower one 3-fid; middle lobe ovate-emarginate. Stam. longer than tube of cor. Anth. approximating, the cells spreading.

1. B. *nigra.* *P.* 7, 8. (P. or W.) 17. — Leaves ovate, crenate-serrate; cal.-teeth broadly ovate, suddenly acuminate, keeled, reflexed, mucronate.—Waste places.
   - β. *fœtida.* — cal.-teeth with very short points; plant downy.
   - γ. *ruderális.* — cal.-teeth acute, gradually acuminate, aristate, erecto-patent.

17. STA'CHYS. *L.* Wound-wort.

Cal. sub-campanulate, 10-ribbed; teeth 5, nearly equal, acuminate; upper lip of cor. concave; lower of 3 unequal lobes, the lateral ones reflexed. Stam. longer than tube of cor., 2 outer ones at length diverging.

* Lower leaves sessile, or longer than their petioles. Stem erect.

1. S. *Betónica.* *P.* 7, 8. (P.) 17. — Lower leaves ovate-oblong, cordate, crenate, obtuse, stalked; floral ones lanceolate, acute, serrate, sessile; bracts as long as cal.—Woods.
2. S. *palústris.* *P.* 7, 8. (P.) 20. — Leaves ovate-lanceolate, sub-cordate, crenate-serrate, acute, nearly sessile; bracts minute.—River banks.
   - β. *ambigua.* — leaves ovate-lanceolate, on stalks but half their length.

* Lower leaves equal to or shorter than their petioles.

† Whorls spiked; stem erect.

3. S. *sylvática.* *P.* 7, 8. (P.) 20. — Leaves cordate ovate, serrate, the floral ones linear, entire; bracts minute.—Woods, hedges.

† Whorls in the axils of leaves similar to the lower ones.

4. S. *Germánica.* *P.* 9. (P.) E.-2. — Stem erect, woolly; leaves oblong-ovate, crenate, wrinkled, whitish, densely silky; bracts as long as cal.—Hedges.
5. S. *arvénsis.* *A.* 8, 9. (P.) 19. — Stem decumbent, nearly smooth; leaves cordate, obtuse, crenate, even; floral ones sessile, acute, slightly hairy; bracts minute.—Corn-fields.

Tr. VI. *SCUTELLARIDÆ.* *Cal. 2-lipped, closed in fruit. Stam. 4, the lower longest, approximating under the upper lip of cor.*

18. PRU'NELLA. *L.* Self-heal.

Upper lip of cal. flat, 3-toothed; lower bifid. Cor. with the upper lip nearly entire, arched; lower 3-lobed. 2 lower stam. longest; fil. with a tooth below the anth.

1. P. *vulgáris.* *P.* 7, 8. (p. B.) 20. — Leaves all ovate-oblong, stalked; teeth of the upper lip of cal. almost obsolete, those of the lower mucronate.—Waste places.

19. SCUTELLA'RIA. *L.* Skull-cap.

Cal.-lips equal, entire; upper one with a concave scale above. Tube of cor. much exserted. Upper lip straight, arched; lower trifid.

1. S. *galericulàta.* P. 7, 8. (B.) — Leaves all oblong-lanceolate, shortly stalked, crenate-serrate; fl's 1-sided, axillary, in pairs.—River-banks. 20.
2. S. *minor.* P. 7-9. (—R.) — Lower leaves broadly ovate; upper lanceolate, nearly entire; fl's same as last.—Moist heaths. 11.

Tr. VIII. *MELISSIDÆ. Cal. 2-lipped, 5-toothed, 13-nerved. Stam. spreading, the upper shortest. Anth.-cells connected above.*

20. MELI'SSA. *L.*

Cal. 2-lipped, upper lip flat, 3-toothed, the lateral teeth folded at the midrib. Cor. with the upper lip concave; lower patent, 3-fid.

1. M. *officinàlis.** P. 6-9. (+W.) E. I.-1. — Leaves ovate, crenate-serrate, acute, pale beneath; cal. sub-campanulate; upper lip flat, truncate, with 3 short, broad teeth; lower with 2 lanceolate teeth.

ORDER LXVIII.—VERBENEÆ.

Herbs, more commonly trees or shrubs, with aromatic properties. Leaves generally opposite, exstipulate. Cal. tubular, persistent. *Cor.* tubular, deciduous, with an *irregular* limb; æstivation imbricated. *Stam.* mostly *didynamous, rarely* 2, *on the cor.* Ov. 2-4-celled; style 1; stigma bifid or undivided. *Fruit* a capsule or berry of 2 *or* 4 *adhering nucules. Seeds single, erect or ascending; alb.* 0, or small and fleshy; *embr. erect;* rad. inferior.

1. VERBENA. *L.* Vervain.

Cal. 5-fid, unequal. Cor. 5-lobed; limb rather 2-lipped. Stam. included. Carpels 4, separating. Seeds 2 or 4, in a thin, evanescent pericarp.

1. V. *officinàlis.* P. 7. (—R.) — Stem erect, branching, somewhat hispid; leaves ovate-oblong, serrate, trifid and cut; fl's remote, in filiform spikes.—Road-sides. 15.

ORDER LXIX.—SCROFULARINEÆ.

Herbs, rarely shrubs, with sedative and virulently poisonous properties. Leaves usually opposite. Fl's axillary, or racemose. Cal. 4 or 5-nary. *Cor.* deciduous, *irregular*, often bilabiate, with an imbricate æstivation. Stam. 2, or didynamous, rarely 5. Ov. of 2 carpels, 2-celled; style simple; stigma mostly 2-lobed. *Fruit* mostly *capsular, 2-celled,* 2-valved, or opening by pores; *placenta axile.* Seeds rarely definite; *embr.* straight, *in axis of a fleshy alb.*; rad. inferior.

* Cal. inflated,
  4-toothed. . . . . 2. RHINANTHUS.
  Cal. 5-cleft, or irregularly 2 or 3-lobed. . . . 3. PEDICULARIS.
* Cal. not inflated,
  † 4-cleft, or 4-toothed.
    Seeds 1 or 2 in each cell. . . . . 4. MELAMPYRUM.
    Seeds many. Middle lobe of lower lip of cor. emarginate 6. EUPHRASIA.
    Seeds many. Middle lobe of lower lip of cor. entire. . 5. BARTSIA.
  † Cal. 5-parted.
    ‡ 1 Cor. rotate.
      Stam. 2. Cor. 4-cleft. . . . . 1. VERONICA.

Stam. 4. Cor. 4-cleft.	8. SIBTHORPIA.
Stam. 5. Cor. 5-cleft.	10. VERBASCUM.
‡ [2] Cor. campanulate, the mouth 4-lobed, oblique. . . .	7. DIGITALIS.
Mouth of cor. 5-fid, equal. . . .	6. LIMOSELLA.
‡ [3] Cor. globose, or ringent, with an inflated tube, the mouth contracted. Stigma simple. . .	11. SCROFULARIA.
Mouth of cor. not contracted. Stigma of 2 irritable plates.	12. MIMULUS.
‡ [4] Cor. personate, gibbous at the base.	13. ANTIRRHINUM.
Cor. spurred at the base.	14. LINARIA.

1. VERO'NICA. *L.* Speedwell.

Cal. 4 or 5-parted. Cor. rotate, 4-cleft, lower lobe smallest. Stam. 2. Seeds few or many.

* Fl's in axillary racemes.

† Racemes opposite.

‡ Plant smooth; fruit-stalks spreading.

1. V. *Beccabúnga.* Leaves shortly stalked, elliptical, obtuse, crenate-serrated;
P. 5-8. (—B.) 20. stem procumbent at base, rooting.—Ditches.

2. V. *Anagállis.* Leaves sessile, lanceolate, acute, serrate; stem erect, bear-
P. 6-8. (B.) 20. ing scions, hollow.—Stagnant water.

‡ Plant hairy.

3. V. *Chamæ'drys.* Stem with 2 opposite, hairy lines; leaves sessile, cordate-
P. 5, 6. (B.) 20. ovate, inciso-serrate; caps. obcordate.—Banks.

† Racemes alternate, very rarely opposite.

‡ Leaves stalked; caps. longer than cal.; plant hairy.

4. V. *officinális.* Bracts lanceolate, longer than pedicels; leaves elliptical,
P. 6-8. (B.) 20. serrate; caps. obcordate, deeply notched.—Heaths.

β. *glábra.* plant universally smooth.

γ. *hirsúta.* leaves ovate-lanceolate; caps. abrupt, undivided.

5. V. *montána.* Bracts linear, shorter than pedicels; leaves broadly ovate,
P. 5, 6. (B.) 19. serrate; caps. flat, orbicular, notched, with crenulated and ciliated margins.—Woods.

‡ Leaves sessile; caps. longer than cal., of 2 flat, orbicular lobes; plant mostly smooth.

6. V. *scutellâta.* Leaves linear-lanceolate, acute, somewhat toothed; fruit-
P. 7, 8. (—B.) 20. stalks deflexed; stem erect.—Ditches.

β. *parmulária.* stem hairy.—Boggy places.

* Fl's in terminal spikes or racemes, or solitary and axillary.

† Leaves (but especially the middle ones) all stalked.

‡ Flower-bearing leaves in opposite pairs; seeds flat.

7. V. *saxátalis.* Raceme lax, few-fl'd, corymbose, pubescent with crisped
P. 7. (B.) S.-1. hairs; leaves elliptical, subserrate; caps. ovate, valves bifid.—Breadalbane and Clova Mountains.

‡ Flower-bearing leaves, single; seeds concave.

§ Leaves with 5-7, large teeth or lobes, cordate; cells 2-seeded.

8. V. *hederifólia.* Sep. cordate, ciliated; caps. of 2 turgid lobes; stem pro-
A. 4, 5. (—B.) 20. cumbent.—Fields and banks.

§ Leaves cordate, ovate, inciso-serrate; cells 6-10-seeded.

9. V. *Buxbáumii.** Leaves shorter than ped; sep. lanceolate, acute; caps.
A. 4-9. (B.) 3. obcordate, of 2 turgid, divaricated lobes, which are

compressed upwards, and sharply keeled.—Cultivated ground.

10. V. *polita.* Leaves mostly shorter than ped.; sep. broadly ovate, acute;
A. 4-9. (B.) ? caps. of 2 turgid lobes.—Cultivated ground.
β. grandiflóra. cor. large.

11. V. *agréstis.* Leaves mostly longer than ped.; sep. oblong, obtuse; caps.
A. 4-9. (—B.) 20. of 2 turgid, keeled lobes, smaller than cal.—Fields.

† Leaves, except the lower ones sessile.

‡ Flower-bearing leaves in opposite pairs; ped. in the axils of one or both.

§ Lowest flowers in the axillæ of true bracts.

12. V. *spicáta.* Stam. protruding beyond cor.; racemes spiked, many-fl'd,
P. 7, 8. (B.) E.-1. densely imbricated; leaves hairy, ovate or lanceolate, crenate-serrate; lower with a cuneate base.—Dry places.
β. hýbrida. lower leaves ovate, with a roundish, cordate base.

13. V. *alpina.* Stam. shorter than cor.; racemes few-fl'd, loosely spiked;
P. 7, 8. (B.) S.-1. leaves smooth, elliptical or ovate, entire or toothed.—Mountain summits.

§ Lowest pedicels in the axillæ of true leaves.

‖ Leaves undivided; seeds flat.

14. V. *fruticulósa.* Leaves elliptic-oblong, or lanceolate, obtuse, sub-serrate;
P. 7. (—R.) S.-1. stem pubescent; caps. ovate; valves bifid.—Mountains.

15. V. *serpyllifólia.* Leaves ovate, slightly crenate, with 3 main ribs, and a
P. 5-8. (—W.) 20. smooth disk; caps. longer than cal.—Way-sides.
β. humifúsa. stem prostrate; racemes shorter.

16. V. *arvénsis.* Leaves ovate-cordate, crenate, hairy, with 1 main rib;
A. 4-7. (—B.) 20. caps. shorter than cal., ciliated.—Sandy places.

‖ Lower leaves divided, or lobed; caps. obcordate, compressed, ciliated on keel.

17. V. *vérna.* Ped. shorter than cal.; leaves pinnatifid, lowest ovate-
A. 5. (B.) E.-1. serrate; seeds flat.—Sandy heaths.

18. V. *tryphýllos.* Ped. longer than cal.; leaves digitate, lowest ovate, den-
A. 4. (B.) E.-1. ticulate; seeds concave.—Sandy fields.

2. RHINA'NTHUS. *L.* Yellow-rattle.

Cal. inflated, 4-toothed. Upper lip of cor. laterally compressed; lower plane 3-lobed. Caps. compressed, obtuse. Seeds flat, bordered.

1. R. *Crista-gálli.* Cal. glabrous; leaves lanceolate, serrated; fl's in lax spikes;
A. 6 (Y.) 20. bracts ovate, inciso-serrate.—Meadows.
β. májor. leaves linear-lanceolate; spikes dense; bracts with an attenuated point.

3. PEDICULA'RIS. *L.* Louse-wort.

Cal. inflated, 5-cleft, or unequally 2 or 3-lobed. Upper lip of cor. laterally compressed, arched; lower plane 3-lobed. Caps. compressed, acute. Seeds angular.

1. P. *palústris.* Cal. of 2 cut and toothed lobes, pubescent, ovate; stems
P. 6, 7. (R.) 20. solitary, branched; leaves pinnatifid.—Wet meadows.

2. P. *sylvática.* Cal. of 5 irregular, notched lobes, glabrous, oblong; stems
P. 5-8. (R.) 20. several from the base, spreading, simple; leaves pinnatifid.—Heaths.

4. MELAMPY'RUM. *L.* Cow-wheat.

Cal. tubular, 4-toothed. Upper lip of cor. laterally compressed, with reflexed margins; lower 3-fid. Caps. oblong, 2-celled, obliquely acuminate, opening on 1 side. Seeds solitary, gibbous at base.

* Fl. in spikes, not 1-sided.

1. M. *cristátum.* Spikes densely imbricated, 4-sided; bracts cordate, acumi-
A. 7. (Y.) E.-3. nate, finely toothed, ciliated.—Woods.
2. M. *arvénse.* Spikes lax, conical, terate; bracts lanceolate, pinnatifid,
A. 6. (Y.) E.-1. the segments setaceous.—Corn-fields, Norfolk. Isle of Wight.

* Fl. axillary, 1-sided, and with the leaves in distant pairs.

3. M. *praténse.* Bracts of upper fl's with 1-2-teeth at base; cor. 4 times
A. 7, 8. (—Y.) 20. as long as cal., its lower lip protruded.—Woods.
β. *montánum.* bracts entire; stem with an alternate, hairy line; leaves linear-lanceolate.
γ. *latifólium.* bracts toothed at base; stem with an alternate hairy line; leaves ovate-lanceolate.
4. M. *sylváticum.* Bracts all entire, linear-lanceolate; cor. twice as long as
A. 7. (Y.) 6. cal., its lips equal.—Alpine woods.

5. BA'RTSIA. *L.*

Cal. tubular, 4-cleft. Upper lip of cor. entire; lower 3 lobed. Caps. pointed, many-seeded.

1. B. *alpína.* Leaves all opposite, ovate, clasping, bluntly serrate; fl. in
P. 6, 7. (+B.) 2. a short, terminal, leafy spike; anth. hairy.—Mountains.
2. B. *viscósa.* Upper leaves alternate, ovate-lanceolate, sessile, acutely
A. 7-9. (Y.) 3. serrate; fl. solitary, axillary, distant; anth. hairy.—Damp places.

6. EUPHRA'SIA. *L.* Eye-bright.

Cal. tubular, 4-fid, or 4-toothed. Upper lip of cor. entire; lower 3-lobed. Caps. obtuse, or emarginate, many-seeded.

1. E. *officinális.* Cor. glabrous; upper lip divided; stam. included; leaves
A. 7, 8. (W.) 20. ovate or cordate, nearly sessile, serrate.—Heaths.
2. E. *Odontites.* Cor. pubescent; upper lip entire; stam. protruded; leaves
A. 7, 8. (R.) 20. linear-lanceolate, remotely serrate.—Waste places.

7. DIGITA'LIS. *L.* Fox-glove.

Cal. in 4 deep segments. Cor. campanulate, with an oblique mouth 4 or 5-lobed. Caps. many-seeded.

1. D. *purpúrea.* Leaves ovate-lanceolate, crenate, downy, lower narrowed
B. 6, 7. (P.) 20. into a foot-stalk; sep. ovate, acute; upper lip of cor. nearly entire.—Hilly places.

8. SIBTHO'RPIA. *L.*

Cal. in 5 deep, spreading segments. Cor. rotate, 5-cleft, the 2 lowest segments narrowest. Caps. compressed, orbicular, 2-valved, 2-seeded.

S. *Europæ'a.* *P.* 6-9. (+W.) E. I.-1. — Plant hairy; stem creeping, filiform; leaves alternate, roundish-reniform, broadly crenate.—Damp places.

9. LIMOSE'LLA. *L.* Mud-wort.

Cal. 5-cleft, equal. Cor. 5-fid, campanulate, equal. Stam. nearly equal. Caps. globose, 2-valved, 1-celled.

1. L. *aquática.* *A.* 7-9. (—R.) E. S.-9. — Leaves lanceolate, spathulate, long-stalked; peduncles crowded, shorter than petioles.—Wet places.

10. VERBA'SCUM. *L.* Mullein.

Cal. 5-parted. Cor. rotate, unequal, Stam. 5, declinate, often hairy. Caps. 2-celled, 2-valved.

* Leaves all decurrent or sessile.

† Fl's in spikes (1. V.), or densely racemose (2. V.). Leaves woolly, crenate.

1. V. *Thápsus.* *B.* 7, 8. (Y.) 18. — Anth. nearly equal; cor. twice as long as the cal. its segments oblong, obtuse; leaves ovate-oblong.—Waste ground.

2. V. *Thapsiförme.* *B.* 7, 8. (Y.) E.-1. — 2 of the anth. oblong; cor. 4 times as long as cal., its segments obovate; leaves lanceolate, ovate; upper acuminate.—Way-side.

† Fl. solitary, or few together, somewhat panicled; hairs on fil. purple.

3. V. *Blattária.* *B.* 8. (Y.) E.-2. — Ped. solitary, much longer than the bracts; stam. unequal; leaves crenate, glabrous.—Gravel banks.

4. V. *virgátum.* *B.* 8. (Y.) E. I.-3. — Ped. 1-5 together, shorter than bracts; stam. nearly equal; leaves doubly serrate, glandular-hairy.—Gravel banks.

* Leaves not decurrent, the lower stalked.

† Fil. with purple hairs.

5. V. *nígrum.* *P.* 7, 8. (Y.) E. S.-12. — Leaves nearly glabrous above, pubescent beneath, cordate, ovate or oblong; ¶l's spicate; stem angular.—Banks.

β. *tomentósum.* — leaves pubescent above, woolly beneath.

γ. *nigro-lychnitis.* — lower leaves ovate-lanceolate, pubescent above, downy beneath,

† Fil. with white hairs.

6. V. *floccósum.* *B.* 7. (Y.) E. S.-1. — Leaves with a loose wool on both sides, crenate, ovate-oblong; stem terate, panicled.—Way-side.

7. V. *Lychnitis.* *B.* 7, 8. (—Y.) E.-4. — Leaves nearly glabrous, woolly and powdery beneath, crenate; lower oblong; upper ovate, acuminate; stem angular, panicled.—Waste places.

11. SCROFULA'RIA. *L.* Fig-wort.

Cal. 5-lobed, rarely deeply 5-cleft. Cor. globose, the tube inflated with a minute, 2-lipped limb, the upper lip 2-lobed, with, rarely without, an internal scale (*staminodium*). Stigma simple.

* Leaves glabrous; sep. roundish, with a membranous margin.
† Stem with 4 angles, but not winged.

1. S. *nodósa.* P. 6, 7. (+P.) 20. — Leaves ovate, acute, sub-cordate, doubly serrated; staminodium very broad, slightly emarginate.—Moist places.

† Stem and petioles winged.

2. S. *Ehrhárti.* P. 8, 9. (+P.) E. S.-3. — Staminodium of diverging lobes; bracts leafy, lanceolate, acute; leaves ovate-lanceolate, sub-cordate, serrate.—Wet places.

3. S. *aquática.* P. 7, 8. (+P.) 18. — Staminodium roundish-reniform, entire; bracts linear, obtuse; leaves oblong, cordate, obtuse, crenate-serrate.—Wet places.

* Leaves downy, or hairy. Stem with 4 blunt (4), or winged (5) angles.

4. S. *Scorodónia.* P. 7. (+P.) E. I.-1. — Staminodium roundish, entire; stam. included; cal. with 5 rounded, membranous, edged lobes; leaves cordate-triangular, with large, double serratures.—Wet places.

5. S. *vernális.* P. 4, 5. (Y.) E. S.-3. — Staminodium 0; stam. protruding from the very contracted mouth of cor.; cal. with 5 deep, acute, segments; leaves cordate, acute, doubly serrate.—Waste places.

12. MI'MULUS. *L.* Monkey-flower.

Cal. tubular, 5-angled, 5-toothed. Cor. ringent, upper lip 2-lobed, without a staminodium; lower 3-fid. Stigma of 2 plates, which are generally irritable.

1. M. *lúteus.** P. 5-7. (Y.* br.) E. S.-1. — Glabrous; leaves erosely toothed; leaves ovate, or sub-lyrate; upper rounded, cordate, clasping; cal. with ovate, acute teeth, the upper one larger.—South Wales. Forfarshire.

13. ANTIRRHI'NUM. *L.* Snap-dragon.

Cal. 5-parted. Cor. personate, gibbous at the base, without a spur. Caps. opening by 3 pores at the top.

1. A. *május.** P. 7, 8. (+R. W.) 12. — Sep. ovate, obtuse, shorter than cor.; leaves lanceolate, glabrous; fl's in a dense raceme.—Old walls.

2. A. *Orántium.* A. 7, 8. (P.) E. I.-9. — Sep. linear, longer than cor.; leaves linear-lanceolate, glabrous; fl's loosely spiked.—Corn-fields.

14. LINA'RIA. *L.* Toad-flax.

Cal. 5-parted. Cor. personate, spurred at base. Caps. opening by teeth or valves at apex.

* Stem or branches trailing; leaves broad.

1. L. *Cymbalária.** P. 5-10. (—P.) 10. — Leaves broadly cordate, alternate, 5-lobed, glabrous; fl. solitary, axillary, on long stalks.—Walls.

2. L. *spúria.* A. 7-9. (—Y.) E.-10. — Leaves ovate, mostly alternate, entire, downy; cor. with a subulate, curved spur; ped. hairy.—Sandy fields.

3. L. *Elátine.* A. 9. (p. Y.) E. I.-13. — Leaves ovate-hastate, lowest ovate, downy; cor. with a subulate, straight spur; ped. glabrous.—Dry fields.

* Stem or branches upright, not trailing; leaves narrow.
† Cal. as long as, or longer than spur of cor.

4. L. *minor.* — Leaves glandular-pubescent, linear-lanceolate, obtuse, mostly alternate; fl. solitary, axillary; seeds sulcate.—Sandy fields.
A. 6-8. (p. Y.) 15.

5. L. *répens.* — Leaves glabrous, linear, scattered; fl's racemose; seeds transversely striated.—Near the sea.
P. 8, 9. (—B.) 5.

† Cal. shorter than the spur of cor; plants glabrous; fl. racemose.

6. L. *Pelisseriána.* — Leaves linear, the lower 3-nate, or 4-nate, the upper alternate; caps. shorter than the linear sep.; seeds with a fimbriated wing.—Bushy hills.
A. 6. (P.) C.

7. L. *Itálica.* — Leaves all linear-lanceolate, scattered; capsule longer than lanceolate sep.; seeds tubercular, with a membranous margin.—Banks.
P. 8, 9. (Y.) E. L.-3.

8. L. *vulgáris.* — Leaves linear-lanceolate, scattered, crowded; capsule longer than the ovate sep.; seeds tubercular, with a membranous margin.—Hedges.
P. 6, 7. (Y.) 18.

The cor. of this and certain other species have a tendency to become regular, and to produce more than a single spur at their base, as in the remarkable variety.

β. *Pelória.* — fl's regular, with 5 spurs at base.

ORDER LXX.—LENTIBULARIEÆ.

Unimportant herbs living in marshes with radical and undivided leaves, or in water with compound, root-like leaves, bearing vesicles. Fl. on a scape, single, spicate, or racemose, with a bract. *Cor. irregular. Stam.* 2; anth. 1-celled. Ov. of 2 carpels, 1-celled; stigma 2-lipped, almost sessile. *Caps.* 1-*celled*, many-seeded, *with a large, central placenta.* Seeds numerous; *alb.* 0; cot. very small; rad. next hilum.

Cal. 2-lipped.	1. PINGUICULA.
Cal. 2-leaved.	2. UTRICULARIA.

1. PINGUI'CULA. *L.* Butter-wort.

Cal. 2-lipped, lower of 1 bifid, upper of 3, segments. Cor. ringent, spurred. Stig. large, of 2 unequal plates or lobes.

* Spur subulate shorter than (1. P.), or as long as (2. P.), the very unequal limb of cor.

1. P. *vulgáris.* — which is veinless, its segments oblong-ovate, rounded, entire; caps. ovate.—Bogs.
P. 6. (P.) 14.

2. P. *grandiflóra.* — Limb of cor. veined, its segments broadly obovate, truncate, the lower middle one notched; capsule oval, rounded.—Marshes.
P. 5. (P.) L.-1.

* Spur conical (3 P.), or cylindrical (4. P.), shorter than limb of cor.

3. P. *alpína.* — Segments of cor. unequal, the upper curved towards the lip of cor.; scape glabrous; capsule acuminate.—Bogs.
P. 6. (Y.) S.-1.

4. P. *Lusitánica.* — Segments of cor. nearly equal; spur decurved; scape downy; capsule globose.—Bogs.
P. 7. (Y. p.) 2.

2. UTRICULA'RIA. *L.* Bladder-wort.

Cal. 2-leaved, equal. Cor. personate, spurred. Stig. 2-lipped.

1. U. *vulgáris.* — Spur conical; upper lip of cor. as long as the palate; vesicles sessile, on the multo-partite leaves.—Ditches.
P. 6-8. (Y.) 17.

2. U. *intermédia.* P. 8. (—Y.)	3.	Spur conical; upper lip of cor. twice as long as palate; vesicles stalked from the tripartite leaves, the segments linear, dichotomous.—Ditches.
3. U. *minor.* P. 6, 7. (—Y.)	13.	Spur short, obtuse; upper lip of cor. as long as palate; vesicles sessile on the dichotomously multifid leaves.—Ditches.

SUB-CLASS III.—DICLINOUS EXOGENS.

EXOGENS, with flowers, some of which bear stamens alone, and some pistils; the petals and sepals, one or other being also generally absent.

DIVISION V.—ANGIOSPERMOUS DICLINOUS EXOGENS.

DICLINOUS EXOGENS; the seeds of which are enclosed within a pericarp.

ORDER LXXI.—CORYLINEÆ.

Trees, or shrubs, abounding in astringency, with alternate, simple, stipulate leaves. Barren fl's:—*Amentaceous.* Stam. 5-20, inserted on the base of the surrounding scales, or of a membranous, valvate cal. Fertile fl's:—solitary, amentaceous, or aggregate. *Cal. adnate to ov., and seated within a coriaceous invol.* (*cupule*), or absent. *Ov. with many cells, and pendulous ovules;* stigmas several, sub-sessile, distinct. *Fruit* a bony or coriaceous, 1-celled nut, *sunk in the cupule;* seeds 1, 2, or 3; embr. exalb., with a minute, superior rad., and large, fleshy cot.

* Stigmas 2.	
Scales of the barren catkins roundish. . . .	1. CARPINUS.
Scales of the barren catkins 3-cleft. . . .	2. CORYLUS.
* Stigmas 3.	
Barren catkins long, pendulous, lax. . . .	3. QUERCUS.
Barren catkin globose.	4. FAGUS.

1. CA'RPINUS. *L.* Horn-beam.

Monœcious. *Barren catkins*, long, cylindrical, the scales rounded, ciliated at base. *Fertile catkins*, lax, conical, the scales large, leafy, 3-lobed, 2-fl'd. Ov. 2-celled; styles 2 in an urceolate, 6-toothed cal. Nut 1-seeded, long, bony.

1. C. *Bétulus.* T. 5.	11.	Scales of fruit oblong, serrated, the 2 lateral lobes the smaller; leaves ovate, doubly and sharply serrated.—Woods.

2. CO'RYLUS. *L.* Hazel-nut.

Monœcious. *Barren fl's*, in a cylindrical catkin, its scales 3-cleft. *Fertile fl's*, several in a scaly invol. Ov. 1-celled, naked; stigmas 2. Cal. 0. Nut 1-seeded, smooth, enclosed in the lacerated invol.

1. C. *Avellária.* P. 4, 5.	20.	Stip. oblong, obtuse; leaves roundish, cordate, pointed; invol. of the ovoid fruit campanulate, spreading.—Hedges.

3. QU'ERCUS. *L.* Oak.

Monœcious. *Barren fl's*, in a long, pendulous, lax catkin. Cal. 5-7-cleft. Stam. 5-10. Fertile fl's, solitary. Ov. round, 3-celled, seated in a cupule. Nut 1-celled, 1-seeded, surrounded at the base by the cupule.

1. Q. *Róbur.* *T.* 4, 5.	20.	Young branches glabrous; leaves shortly stalked, slightly pubescent beneath, lobes oblong, rounded, with acute sinuses; fertile catkins long-stalked.—Woods.
2. Q. *intermédia.* *T.* 4, 5.	?	Young branches glabrous; leaves long-stalked, glaucous, with a copious stellate pubescence beneath, lobes short, rounded, with shallow, obtuse sinuses; fertile catkins short-stalked.—Woods.
3. Q. *sessiliflóra.* *T.* 4, 5.	?	Young branches pubescent; leaves long-stalked, glabrous beneath; lobes ovate-oblong, obtuse; sinuses deep, acute; catkins sessile.—Hilly woods.

2 and 3, probably but varieties of 1.

4. FA'GUS. *L.* Beech.

Monœcious. *Barren fl's*, in a globose catkin. Stam. 10-15. *Fertile fl's* in pairs. Cal. 6-lobed, adnate, with the 3-celled, 3-angled ov., and enclosed in a spiny, 4-lobed invol. Nut 1-celled, 1 or 2-seeded.

1. F. *sylvática.* *T.* 4, 5.	17.	Leaves ovate, glabrous, obsoletely toothed, with ciliated margins; prickles of invol. simple.—Woods.

ORDER LXXII.—BETULINEÆ.

Trees, or shrubs, with a tonic astringent bark and alternate simple leaves, with deciduous stip. *Fl's amentaceous* with scaly bracts often in a whorl, and resembling a cal. Barren fl's:—Stam. variable, opposite the bracts. Fertile fl's:—*Ov. superior, 2-celled.* Stigmas 2. Fruit membranous, indehiscent, not united with the scales, by abortion 1-celled. *Seeds pendulous, not villose;* embr. straight; *alb.* 0; *rad. superior.*

Fertile catkin elongated.	1. BETULA.
Fertile catkin roundish-ovate.	2. ALNUS.

1. BE'TULA. *L.* Birch.

Barren catkin:—Scales 3-nate, the middle one stameniferous. Cal. 0. *Fertile catkin:*—Scales 3-lobed, 3-fl'd, deciduous. Ov. 2-celled. Styles 2. Fruit winged, with 1 fertile cell.

1. B. *álba.* *T.* 4, 5.	20.	Leaves ovate-deltoid, doubly serrate, acute, nearly smooth; scales of fertile catkin 3-lobed; fruit shorter than the wing; branches erect, pubescent when young.
β. *péndula.*		branches weeping, smooth and warted when young.
γ. *glutinosa.*		leaves cordate-ovate; fruit equally winged.
2. B. *nána.* *S.* 5.	S.-3.	Leaves orbicular, obtusely crenate, glabrous; scales of fertile catkin trifid, divided to base; segments equal.—Bogs, Highlands.
β. *Babingtónii.*		scales divided half way.

2. A'LNUS. *Tourn.* Alder.

Barren catkin :—Scales 3-lobed, 3-fl'd. Cal. 4-parted. *Fertile catkin* :—Scales 3-lobed, persistent, 2-fl'd. Cal. 0. Styles 2. Nut compressed, not winged, 2-celled.

1. A. *glutinósa.* *T.* 4. — 20. Leaves roundish-cuneate, obtuse, glutinous, with a lobed and serrated margin, downy in axillæ of ribs beneath.—Watering places.

ORDER LXXIII.—SALICINEÆ.

Trees, or shrubs, with alternate, mostly simple, stipulate leaves, possessed of tonic, bitter, and astringent qualities. *Fl. amentaceous*, mostly diœcious. Barren fl's :—Stam. distinct, or monadelphous. Fertile fl's :—*Ov. superior*, 1-*celled*, with numerous, erect ovules. Stig. 2-4. *Fruit* 1-*celled*, 3-*valved*, *many-seeded*. Seeds adhering to the lower part of the valves, or base of cell, covered with long, silky hairs ; alb. 0 ; embr. erect ; rad. inferior.

Stam. 8-30.	1. POPULUS.
Stam. 1-5.	2. SALIX.

1. PO'PULUS. *L.* Poplar.

Scales of amentum lacerated. Stam. 8-30, from an oblique cup (nectary). Fruit a follicle, almost 2-celled by the involute margins of the valves.

* Leaves white, downy, or hoary beneath.

1. P. *álba.* *T.* 4. — 15. Stigmas 8 ; catkins ovate ; leaves roundish-cordate, lobed, toothed, of the young shoots 5-lobed.—Damp woods.
2. P. *canéscens.* *T.* 4. — 9. Stigmas 4 ; catkins cylindrical ; leaves roundish, deeply waved, toothed ; of the young shoots entire.—Damp meadows.

* Leaves glabrous on both sides.

3. P. *trémula.* *T.* 3, 4. — 16. Leaves nearly round, acute, broadly toothed ; stigmas 4, erect, each pair with an auricled lobe.—Moist woods.
4. P. *nigra.* *T.* 3. — 13. Leaves deltoid, acuminate, serrated ; stigmas 4, simple, spreading.—Wet places.

2. SA'LIX. *L.* Willow. Osier. Sallow.

Scales of catkin imbricated. Stam. 1-5. Fruit a 1-celled, naked follicle, with a gland at base.

* Catkins pedunculate,

† [1] appearing with the leaves, lateral ; trees or large shrubs ; nectary double ; leaves serrated, inclining to lanceolate.

‡ Scales of the fertile catkins deciduous before the maturity of the fruit, pale, of the same colour throughout.

§ Petioles glandular, especially towards the top ; stam. about 5.

1. S. *pentándra.* *T.* 4, 5. — 11. Leaves ovate, or elliptic-lanceolate, acuminate, smooth, with glandular serratures ; barren catkins large and

handsome, fragrant; caps. smooth; style and pedicel short; (2) (*a*).

A large, handsome shrub, or small tree, resembling an evergreen in its bright, glossy leaves.

*S. *cuspidáta.* differs from S. *pentandra* in its fewer stam., more elongated pedicel (3-4), its more acuminated leaves, and oblique stip.

§ Petioles without glands; stam. 2; young shoots very brittle in the spring.

2. S. *frágilis, L.* *T.* 5. 16. Leaves lanceolate, acuminate, very smooth, except in a young state, serrated; stip. ½-cordate; caps. ovate-lanceolate, smooth; pedicellate; style moderate; stigma rather thick, bifid; (2) or (3). Plant bright green.

α. *decípiens.* bark polished like porcelain; buds black in the spring; young shoots often crimson, the colour extending occasionally to the mid-rib of the leaves; leaves lanceolate, quite smooth, serrated, pale, and much reticulated beneath. The barren tree only referred to.—Essex. Yorkshire, &c.

β. *frágilis, E. Bot.* leaves lanceolate, or ovate-lanceolate, much acuminated, serrated, often broad at the base, and glaucous beneath, smooth or slightly downy on the under side; ov. short, thick; stigmas about equal with the scale; style and pedicel very short; barren catkins large, thick, and handsome.

γ. *Russelliána.* leaves narrower than the last, more downy beneath when young, very coarsely and irregularly serrated; ov. tapering; stigmas extending considerably beyond the scale; pedicel and style longer than the last; barren catkins as in β, but the leaves more coarsely serrated, and more downy beneath.

3. S. *álba.* *T.* 5. 17. leaves lanceolate, acuminate, serrulate, silky on both sides, stip. lanceolate; floral leaves of barren catkins beautifully ciliated; scales rounded, broad at the base, but suddenly contracted, much shorter than the stam., but about equal to the ov., which is short and thick; pedicel and style very short; general tint at a distance dull grey. (1.)

α. *cærúlea.* leaves ultimately smooth beneath, and glaucous.

β. *vitéllina.* shoots golden yellow; scales longer than either stamens or style, lanceolate, pointed.

Trees of large size and rapid growth, the var. *cærulea* the most remarkable in this respect; var. β less frequent.

‡ Scales of the fertile catkin persistent, of the same pale colour throughout; stam. 3; plants casting their back towards autumn; stip. shorter than petiole.

4. S. *amygdálina, L.* *T.* 4, 5. E. S.-5. leaves serrated, glabrous; stipules ½-cordate, approaching to reniform, blunt; scales of the catkins nearly smooth, (2) or (3).—By water.

(*a*) The numbers at the end of the descriptions of each species, refer to the relative proportion borne by the pedicel of the caps. to the nectary. The nectary is taken to be 1; (1), denotes equality; (0), that the nectary surpasses the base of the caps., and (2) or (3), &c., represents the multiple the pedicel is of the nectary.

α. *amygdálina E. Bot.* young shoots strongly furrowed; leaves ovate, or ovate-oblong, glaucous beneath; ov. short, thick, with 2 deep, and 2 shallow furrows; style scarcely any; stigmas large, spreading horizontally; a large shrub.

β. *contórta.* shoots furrowed; leaves green on both sides, linear-lanceolate, flat; ov. attenuated above; a large shrub.

γ. *triándra, E. Bot.* leaves linear-oblong, serrated, smooth; ov. somewhat attenuated, rather longer than the scale; stigmas minute; style short.

δ. *Hoffmaniána.* shoots round; leaves ovate-lanceolate, acuminate; pale beneath; stip. very large, sometimes equal with the petiole.

ε. *triándra, curtis.* shoots slightly angular towards the point; leaves lanceolate, or linear-lanceolate, smaller than in any other foregoing; stip. also smaller, approaching to reniform; ov. attenuated.—Barren plant, Essex; fertile, Yorkshire.

5. S. *unduláta.* S. 4, 5. E. ?-4. Leaves lanceolate, much acuminated, sharply and finely serrated, smooth, often undulated; stip. ½-cordate, acute; scales very hairy; ov. smooth, constricted about the middle; style short; stigmas spreading, emarginate or bifid; (2).—Essex.

† [2] Catkins appearing with the full grown leaves, lateral or sub-terminal; shrubs about a foot high, very much branched; nectary single; ped. leafless above; leaves with prominent ribs, green on both sides.

6. S. *myrsinites.* S. 4, 5. S.-1. Leaves approaching to ovate, scarcely an inch long, serrated, sometimes downy on the prominent ribs, twisted and undulated, drying black; stip. often as long as, or longer than the petiole, serrated, smooth; ov. on a short stalk, downy or smooth; style elongated; stigmas cloven, reddish; scales dark brown, hairy; (0).—Highlands.

β. *arbutifólia.* β. smaller in all its parts.

Flowering, when cultivated, in May. The withered leaves remain even until the young catkins show themselves, so that in the early spring the plants look dead. The bunches of young leaves have a strong, resinous smell.

7. S. *procúmbens.* S. 5, 6. S.-1. Leaves flat, drying yellowish green, slightly serrated; style very short; ov. pubescent; leaves and catkins much larger than in the last, the catkins far more pubescent; ped. with buds in the axils.—Highlands.

A low, procumbent shrub, with exceedingly thick branches, and large buds.

† [2] Catkins appearing with the full-grown leaves, terminal; dwarf, alpine shrubs, the trunk creeping beneath the surface; ped. gemmiferous; leaves inclining to orbicular.

8. S. *reticuláta.* S. 6. E. S.-1. Leaves rounded or ovate, glaucous beneath, much reticulated, entire, on a long petiole; ped. with about 3 leaves, bare for about the length of the catkins; (0).—Lofty mountains, Scotland and North of England.

A beautiful dwarf shrub.

9. S. *herbácea.* S. 6. E. S. Ped. with 2 leaves at the base of the catkins; catkins of few fl's; leaves rounded, crenate, green and shining on both sides, nearly sessile; (0).—Mountain summits, Wales, Scotland, North of England.

Often not rising more than an inch above the earth.

* Catkins sessile.

† Anth. becoming finally black; caps. sessile, pubescent; leaves green, or glaucous beneath, not white and silky, generally smooth, more or less serrated.—*Osiers.*

‡ Stip. 0; style very short, or none; stam. 1, of 2 fil. combined; anth. 4-locular; leaves often opposite.

10. S. *purpúrea, L.* T. 3, 4. — Leaves lanceolate, broader above, acuminate, finely serrulate, flat, smooth; caps. ovate, sessile, tomentose; style short; stigmas ovate; (0).—River-banks.

α. *Hélix.* — a small tree, with erect, yellowish branches; leaves oblongo-lanceolate, elongated, acuminate, at the base linear and oblique.

β. *purpúrea, E. Bot.* — decumbent, with erect, purple branches; leaves oblique, broadest and serrated towards the point, very narrow at the base, glaucous beneath; fertile catkins remarkably slender and compact.

γ. *Woollgariána.* — leaves cuneiform, short, very broad above, glaucous beneath, serrated, scarcely oblique; fertile catkins much thicker and softer.

δ. *ramulósa.* — leaves oblongo-lanceolate, more or less oblique, attenuated at the base, varying in breadth above, and more or less acuminate, pale beneath.

ε. *Lambertiána.* — leaves oblong, or linear-lanceolate, sharply serrated towards the point, scarcely attenuated towards the base, and very slightly oblique.

‡ Stip. linear; style of moderate length; stam. 2, fil. more or less combined; leaves mostly alternate.

11. S. *rúbra.* S. 4, 5. — Monadelphous; leaves linear-lanceolate, elongated, (broader and less elongated in the barren plant); stigmas ovate, undivided; style as long as the stigmas; (0).—River-banks. 6.

α. *Forbyána.* — leaves broader, pubescent beneath, especially when young; stigmas filiform, divided.

In its leaves S. *rubra* (especially the fertile plant), approaches the Viminales. The broad-leaved exstipulate forms, resemble some of the vars. of S. *purpurea*. The larger style, however, and half-connected filament, distinguish it from S. *purpurea*; and the want of silky hairs on the under-side of the leaves from the Viminales. The buds of S. *rubra* are, in the spring, of a bright crimson.

† Anth. becoming yellow or brown; stam. 2; catkins lateral.

‡ [1] Leaves long, comparatively narrow, with a silky, shining pubescence.

§ [1] Caps. sessile, or very nearly so, pubescent; slender trees or large shrubs with long, comparatively narrow leaves.—*Osiers.*

12. S. *viminális.* S. 4. — Leaves linear, or linear-lanceolate; stip. inconspicuous; style elongated; stigmas undivided; (0).—River-banks. 20.

β. *intricáta.* — with broader leaves; caps. shorter, clothed with appressed silkiness; style very short; stigmas from the first divided, reflexed and entangled.

γ. *stipuláris.* — leaves lanceolate; stip. generally present, linear-lanceolate, denticulate, or ½-cordate, acuminate; stigmas elongated.

13. S. *stipuláris.* S. 4. — leaves lanceolate, ½-cordate, acute; caps. sessile; style very short (Engl. Fl.), elongated (Hook. Br. Fl.), stigmas linear, undivided; (0).—Osier-holts, Suffolk. E.-3.

Remarkable for its stout catkins, and its very large stipules. The style in E. Bot. is represented much shorter than the stigmas. In many respects this species approaches S. viminalis.

§ [3] Caps. on a ped. about equal to the nectary, pubescent; style conspicuous; slender trees, or shrubs, with long, comparatively narrow leaves.—*Osiers.*

14. S. *Smithiána*, *Willd.* Leaves broadly lanceolate; style about equal to the stigmas;
S. 4. 10. caps. ovate-lanceolate; stigmas filiform, often divided; stip. reniform, ½-cordate, acuminate; (1).—River-sides.

α. *Smithiána*, *E. Bot.* stip. linear, ½-lunate; leaves rounded at the base, long and tapering, not linear; whole plant of a bright, lively, green hue.

β. *rugósa.* stip. ½-cordate; leaves approaching to oblong-lanceolate, not so long as the last; plant of a darker hue; stigmas undivided or cloven.

γ. *ferruginea.* stip. reniform; leaves undulated, denticulate, often almost green beneath.

The leaves of S. *Smithiana* are broader and less white beneath than in S. *viminalis*, in addition to which the distinctness of the pedicel, in the former, will serve readily to distinguish the species. The varieties of both are infinite. S. *ferruginea* recedes the most widely from the general appearance of the Viminales. The true *ferruginea*, *And.*, has the style so short, that it has been referred to S. *cinerea*. Specimens from Shrewsbury have catkins peculiarly soft and villous, resembling in this respect the continental S. *mollissima*, *Ehr.*

15. S. *acumináta.*[a] leaves lanceolate-oblong, cinereous beneath, and clothed
S. v. *T.* 12. with pubescence, which is less silky, and more crisped than in the rest of the section; stip. large, ½-cordate; style distinct; stigmas ovate, undivided; (1); fertile catkins exceedingly soft and villous.——Hedges.

The affinity of this species to the Cinereæ is striking, but it is a coarse osier, sending up long, stout rods, clothed in the upper part with brown pubescence. The nectary is stated by Koch to be equal to the pedicel; in the English Botany, it is represented longer. The leaves are much broader, and more glaucous beneath than in the other Viminales.

§ [3] Caps. on a ped., twice, or more than twice the length of the nectary, rarely smooth; small shrubs, either upright or procumbent; leaves very variable both in size and figure, sometimes very small, but characterised by their satiny, shining pubescence.

16. S. *rosmarinifólia.* Erect, slender; leaves linear-lanceolate, entire, silky and
S. 4. 3. shining beneath, turning black in drying, with a straight point; stip. lanceolate; barren catkins short, oval; fertile, "shortly oblong, curved, lax; ov. stalked, silky, lanceolate, acuminate; style about equal to the linear, divided stigmas; scales short, villous;" (2 or 3.)

This and S. *incubacea*, *Willd.*, (S. *angustifolia*, *Wulf.*,) serve to connect S. *viminalis* with S. *repens.*

17. S. *angustifólia.* "leaves linear-lanceolate, nearly glabrous, with minute,
T. 4. S.-1. glandular teeth, the young leaves silky, glaucous beneath; catkins ovate, erect; ov. ovate, acuminate, densely silky, stalked; style about as long as the broad, erect stigmas; scales very villous, nearly as long as the young ov." (2 and 3).—Mountains.

S. *angustifolia*, *Wulf. Koch!* has lanceolate leaves, approaching S. *viminalis*, lanceolate stip., cylindrical, erect catkins, pedicellate and tomentose ov., and style equal to or shorter than stigmas. The full-grown leaf figured in E. Bot. is quite unlike. S. *rosmarinifolia*, *L*, *Koch!* differs in the fertile catkins, being almost round and very short, buried in the floral leaves, and not curved as in E. Bot.

18. S. *Doniána.* Leaves ovate, lanceolate, tapering at base, with a short point,
S. 5. S.-1. entire, or with a denticulation here and there, pale, and

occasionally downy beneath; stip. generally 0; catkins erect, cylindrical, pubescent; ov. ovate, conical, stalked, silky; style very short; stigmas minute; (2).

The barren plant is stated to be monadelphous, the anth. turning yellowish-brown in withering.

19. S. *répens*, *L.* S. 5. 16. "Leaves elliptical, or elliptic-lanceolate, acute, entire, or with minute, glandular serratures, somewhat downy, glaucous, and generally very silky beneath; ov. on a long stalk, lanceolate, very silky; stigmas bifid; stems more or less procumbent;" (Hook), (2 or 3).—Sandy heaths.

α. *fúsca.* "stem much branched, upright, decumbent below; leaves elliptic-lanceolate."

β. *répens*, *E. Bot.* "stem depressed, with short, upright branches; leaves elliptic-lanceolate."

γ. *prostráta.* "stem prostrate, with elongated, straight branches; leaves elliptic-oblong"

δ. *fætida.* "stem recumbent; leaves elliptical."

Sub-var. *parvifólia. E. Bot.*, "leaves smaller."

ε. *incubácea.* "stem procumbent; leaves elliptic-lanceolate."

ξ. *argéntea.* "stem erect, or spreading; leaves elliptical, with a recurved point, very silvery beneath."

Dwarf, much branched, shrubs, recognized by the peculiar character of its silvery, appressed pubescence, and the generally twisted point of its leaves.

20. S. *ambígua. Ehr.* S. 5. 2. Leaves obovate, cuspidate, tapering at base, rather wavy and denticulate at margin, rugose and pubescent beneath; stip. ½-cordate, denticulate, hairy; catkins oval; ov. pedicellate, ovate, very silky; style short; stigmas pale; (3-4).—Heaths, bogs and woods.

α. *ambigua*, *Willd. Ehr.* "stigmas sessile, or nearly so; leaves moderately hairy, or silky."

β. "stigmas sessile, or nearly so (quite entire);" leaves obovate, very silky on both sides.

γ. *spathuláta.* style elongated; leaves oblong, moderately hairy or silky.

‡ [2] Leaves comparatively broad, approaching to elliptical, pale, glaucous, or reddish and pubescent beneath, the down crisped, not white and silky; style almost 0; ped. thrice (or more) as long as nectary; ov. pubescent; large shrubs or small trees, with torulose branches.

21. S. *cinérea*, *L.* S. 3, 4. 12. Buds pubescent; leaves somewhat serrated, oblong-obovate, villous beneath; stip. ½-cordate; (4).

α. *cinérea*, *E. Bot.* leaves obovate-lanceolate, thick, reddish beneath; stip. ½-cordate, acute.

β. *aquática.* leaves obovate, elliptical, thin, glaucous beneath; stip. reniform.

γ. *oleifólia.* leaves obovate-lanceolate, narrower, green beneath; stip. small.

There are many intermediate forms. Style always very short; leaves exceedingly variable, sometimes resembling those of S. acuminata; sometimes very thin, glaucous beneath, elliptic-lanceolate, wavy and slashed, rather than serrated, with very large stip; sometimes varigated; occasionally glaucous, and nearly smooth, or rusty beneath, with crisp pubescence, round at the base, or tapering, so also at the point. Catkins more constant.

22. S. *aurita.* S. 4. 18. Buds smooth; leaves obovate, repando-dentate, rugose, often tapering at the base, thin in texture, pale green

beneath, oblique at the point; stip. broadly ½-cordate; stigmas and scales often pale-reddish; barren catkins slender, frequently on a leafy peduncle; (3 or 4).—Woods and Hedges, or turfy pastures and bogs.

The stip. are generally very conspicuous; the plant varies from a shrub not more than 18 inches high, to a slender tree. The dwarf variety grows in turfy, spongy situations.

23. S. *caprĕa*. *T.* 3, 4. 20. Buds smooth, those containing the catkins very large; leaves extremely broad, crenate-serrate, very soft, glaucous and tomentose beneath, elliptical, ovate, or cordate, pointed; stip. ½-cordate; catkins large, blunt, thick; style very short; pedicel long, tomentose; (4-6).—Hedges.

Readily known by its broad crenate, rather than serrated leaves, green above, strongly veined, white and tomentose beneath.

α. *sphaceláta*. a sub-alpine var., known by its smaller size, its elliptical, pointed leaves, not so strongly veined and tomentose beneath, and withered at the tip.

It forms a low, red-twigged bush.

In S. *caprea* the catkins have been observed to change their nature, the same capsule producing at the apex pollen, and containing below ovules. The like alteration occurs in the *Bicolors*. It has been supposed that this metamorphosis is owing to summers warmer than usual, and it is mentioned here to draw the attention of botanists to the subject.

‡ [3] Leaves serrated, inclining to lanceolate, downy beneath, becoming almost smooth, turning black in drying; stip. with a straight point; style elongated, deeply cloven, giving the caps. a beaked appearance; ov. smooth, or downy, subulate; large or small shrubs, with torulose branches.

24. S. *nígricans*, *Fries*. *S.* 4, 5. ? Leaves ovate-elliptical, or lanceolate, undulate-serrate, glaucous or pruinose beneath, thin in texture; young shoots and leaves villous; stip. ½-cordate, often large; caps. ovate, subulate; scales brown, hairy; (2 or 3).—River-banks.

α. S. *hírta*. catkins dense, blunt, with few, floral leaves; ov. very pubescent; pedicel downy; style rather short, cloven; stigmas short, thick, emarginate; leaves elliptic-obovate, pale and downy beneath; extremities of shoots densely cottony; stip. minute, glandular, smooth.

β. *cotinifólia*. young shoots finely downy; leaves oval, approaching to orbicular or cordate, pale and somewhat downy beneath; catkins short, but dense; ov. pubescent; style cloven, more than half way down, the points tipped with the small, emarginate stigmas; stip. small, or wanting.

γ. *nígricans*, *Sm.* "leaves elliptic-lanceolate, acute, crenate, glabrous, with a downy rib above, glaucous beneath; stamens 2, thrice the length of the hairy scales; ov. lanceolate, downy, on a short, downy stalk."

δ. *Andersoniána*. leaves elliptical, or elliptic-oblong, pointed, pale, or somewhat glaucous beneath, nearly smooth; shoots and young leaves villous; stip. smooth, glandular; catkins short at first, enveloped in the floral leaves, and never surpassing them; caps. subulate, smooth as well as its pedicel; style cloven; stigmas bifid.

ι. S. *Damascéna.* leaves broadly elliptical, pointed, green on both sides, thin in texture, finely downy beneath, crenate-serrate; stip. often wanting; catkins longer than the last; ov. smooth as well as its pedicel; style cloven; stigmas longer, cloven, entangled.

ξ. *Forsteriána.* leaves elliptical, pointed, finely serrate, glaucous beneath; stip. small, smooth; catkins much longer than the floral leaves; caps. more or less downy, often nearly smooth: stigmas short, thick; pedicel villous.

ο. *petræ'a.* leaves and whole plant dark green, narrower in proportion to their length than in any of the above, elliptic-oblong, sometimes approaching to lanceolate, tapering at both ends, rather coarsely serrated and wavy at the margin, somewhat rugose above, paler beneath; stip. larger than in any of the foregoing; catkins blunt, longer than floral leaves; ov. smooth, much wrinkled upwards; style cloven; stigmas divided.

π. *rupéstris.* "stem trailing; leaves obovate, acute, serrated, flat, even, silky on both sides; stip. hairy; branches minutely downy; ov. stalked, subulate, silky; style as long as the blunt, undivided stigmas." *Borr.*

ρ. *propínqua.* "erect; young shoots minutely pubescent; leaves elliptical, obscurely crenate, nearly flat; with slightly sunken veins, nearly naked on both sides, pale green beneath; stip. small, vaulted, glandulose; ov. stalked, silky towards the point; style longer than the notched stigmas." *Borr.*

S. *nigricans*, it will be seen, is a very variable species. Other forms will, doubtless occur, which will not be referrible to any of the above varieties. The specimens in the *Salict. Brit.*, referred to S. *hirta*, have smooth caps., and the leaves are very broad. I am informed by Mr. Ward, that the fertile plant occurs in Castle Eden Dene, and that it does not turn black. I possess a living plant named S. *nigricans*, the leaves, shoots, and buds of which are quite smooth, resembling one of the *Bicolors*; leaves scarcely serrated, elliptic-oblong, tapering at both ends. S. *petræa* is a well-marked variety. I am unacquainted with the true *rupestris* described in English Flora; but the forms in *Salict. Brit.*, certainly, are very unlike the other vars., and even differ from each other. They do not turn black in drying, nor is the capsule subulate, nor the style so marked and prominent. Perhaps they would more correctly be arranged with the pubescent vars. of S. *bicolor*, such as S. *tenuior*. The leaves are nearly entire, or with wavy teeth, broad or narrow, generally elliptic-oblong, downy on both sides, especially on the strong, prominent, reddish ribs; or nearly smooth, pale beneath, with a few weak hairs, or copiously silky. Caps. smooth or downy, in form rather conical than subulate. The specimens named S. *propinqua* in *Salict. Brit.*, have leaves crenate, nearly smooth, glaucous beneath; caps. almost entirely smooth.

‡ [4] Leaves serrated, smooth, not turning black; stip. generally minute, with a curved point; style elongated, most frequently cloven; ov. ovate-lanceolate, smooth or downy; branches torulose.

25. S. *bicolor.* leaves ovate-elliptical or lanceolate, serrulate or entire, generally of a bright, shining green; in texture, when mature, rigid, usually glaucous beneath, glabrous; stip. oblique at the point, minute; young shoots and buds rarely pubescent, except towards the point; caps. ovate-lanceolate, pedicellate, smooth or downy; scales brown; (2-3).—North of England and Scotland.

S. 4. E. S.-4.

α. *tenúior.* buds and shoots smooth, except at the points; leaves narrow-lanceolate, or lanceolate-oblong, pointed, nearly smooth and entire, glaucous beneath; stip. small; cat-

kins an inch long, slender; ov. ovate-lanceolate, pubescent as well as the pedicel; style short; stigmas small, undivided.

β. *laurina.* leaves elliptic-obovate, tapering at the base, pointed, scarcely serrated, finely downy beneath, incurved at the margin; stip. small; catkins stout, very villous; ov. ovate-lanceolate, very pubescent; style short; stigmas short and thick.

γ. *laxiflóra.* shoots and buds smooth, except towards the point; leaves broadly elliptical, or elliptic-obovate, pointed, smooth, glaucous beneath; stip. small; catkins rather thick, often lax towards the base; ov. constricted about the middle, smooth below, or altogether smooth as well as the pedicel; style long; stigmas cloven.

δ. *radícans.* "leaves obovate, or elliptic-lanceolate, with often wavy serratures, glabrous, glaucous beneath; ov. lanceolate, stalked, very silky as well as the scales; style elongated; stigmas entire or bifid."

ι. *Borreriána.* shoots and buds of the male plant smooth; leaves lanceolate, or lanceolate-oblong, tapering at both ends, serrate, somewhat downy beneath, especially near the midrib, glaucous below; sterile catkins abundantly produced, large, handsome; stip. small or wanting; "ov. lanceolate-subulate, on long stalks, quite glabrous; style long, bifid;" stigmas linear-bifid. A particularly elegant variety.

ζ. *Davalliána.* shoots and buds smooth; leaves narrow-elliptical, pointed, smooth, glaucous beneath, obsoletely serrated; catkins blunt, thick, dense; ov. pubescent; stigmas cloven.

η. *tétrapla.* shoots and buds quite smooth, except at the point; leaves elliptic-obovate, with an elongated point obsoletely serrated, glaucous beneath; stip. small; ov. ovate-lanceolate, pubescent towards the base of the style; pedicel villous; stigmas short, undivided.

θ. *Weigeliána.* shoots smooth; buds slightly downy; leaves (of the sterile plant) elliptic, sometimes almost round, with a short point, and shallow serratures, smooth, glaucous beneath; (of the fertile plant) elliptical, tapering at both ends, serrate, with a longer point, nearly smooth beneath; stip. on both sterile and fertile plants minute, or wanting; male catkins finally on a short stalk; ov. lanceolate, pubescent, as well as the pedicel; style and stigmas cloven.

ι. *tenuifólia.* shoots and buds towards the points very villous; leaves elliptical, with wavy, irregular crenatures, often somewhat twisted at the point, finely downy and glaucous beneath, ultimately glabrous; stip. moderate, oblique, downy; ov. pubescent towards the base; pedicel very villous; style elongated; stigmas cloven. There is a second form with slender, curved catkins; ov. ovate, short, smooth, as well as the stalk; stigmas minute, cloven; young leaves clothed, with shining pubescence.

κ. *nítens.* buds downy; shoots nearly smooth; leaves rather dis-

coloured in drying, generally narrow, elliptical, but variable in breadth, pointed, tapering at the base, slightly downy beneath; midrib downy above, bluntly serrate; stip. small; sterile catkins large, handsome; twigs very dark-coloured, and shining; fertile catkins short, rather slender; ov. ovate, pubescent, on a downy stalk; stigmas undivided.

λ. *Croweána.* shoots smooth; buds slightly downy; leaves elliptic-obovate, pointed, tapering at the base, nearly quite smooth, glaucous beneath, obsoletely serrated; fil. combined at the base.

μ. *floribúnda.* shoots and buds nearly smooth; leaves rather broadly elliptical, tapering at both ends, often oblique at the point, very glaucous beneath, nearly smooth, serrated; stip. crescent-shaped, generally present, serrated, glaucous on the under-side; "filaments slightly bearded at the base." (Hook. Br. Fl.)

ν. *phyllereifólia.* shoots and buds villous; leaves elliptical, tapering at both ends, on rather long petioles, little more than an inch long, serrated, glaucous beneath, smooth; sterile catkins oval. A particularly elegant dwarf shrub.

ξ. *Dicksoniána.* "leaves elliptical, acute, slightly toothed, glabrous, glaucous beneath; young branches very glabrous; catkins ovate, short, erect; ov. stalked, ovate, silky; stigmas nearly sessile," (Hook).—A small shrub of the habit and stature of the last.

The varieties of this species are endless, and recognized with much difficulty. From the specimens in the *Salict. Britannicum*, it will be seen, how little dependance can be placed upon the slight characters by which the forms are distinguished. S. *Weigeliana*, *Forbes*, (S. *amœna*, MSS.) might have been added to the list. S. *tenuior*, for example, with its broad, serrated leaves, and short, broad catkins, bears but little resemblance to S *tenuior*, *E. Bot.*, above described. The same may be said of the specimens of S. *laurina*, S. *tetrapla*, and others. S. *bicolor* and S. *nigricans* are, undoubtedly, distinct, though puzzling forms occur, with difficulty referrible to either. The dark hue, and thin texture, and more abundant pubescence, and pruinose appearance of the leaves beneath, as well as the straight pointed stipules (Kock. and Fries), subulate ovarium, and long style, are marked characters of S. *nigricans*.

‡ [5] Leaves tomentose, cottony, not silky, often so on both sides; caps. nearly sessile; style much elongated; small, much branched shrubs, with entire leaves, white and cottony, especially beneath.

26. S. *Lápponum.* "Fertile catkins in fruit sub-pedunculate; caps. ovate-
S. 6-8. S.-4. lanceolate, tomentose or glabrous, sessile, ultimately on a very short stalk; stigmas linear, bifid; leaves lanceolate, or elliptical-acuminate, very entire or serrulate; younger ones silky-villous, when mature rugose above, beneath tomentose, dull; stip. ½-cordate, recurved at the point" (0—1).—*Koch. Syn.*

α. *glaúca.* leaves green, nearly smooth above, very white and cottony beneath; ov. short, broad, very villous; style short, ("much elongated as the fruit ripens."—*Smith.*)

β. *arenária.* leaves ovate, or elliptical, dull green above, or grey on both sides, often white and cottony beneath, but the contrast between the two surfaces less striking than in the last; style much elongated, dark-coloured.

Sub-var. *Stuartiána.*—leaves ovate-lanceolate, sharp at both ends, grey, with hairs above, even when full grown.

S. *glauca L.*, *Reichenbach*, Fl. German. Exotic. No. 1628! differs in the nature of its pubescence, which is villous, and not cottony, crisp or straight, but not matted and entangled; in the form of its leaves, which are elliptic-lanceolate, acuminate, and in the pedunculate catkins, furnished with floral leaves, and the style cloven to the base with bifid stigmas. Any one comparing the descriptions of Smith and Hooker, will see how impossible it is to distinguish the modifications of S. *Lapponum* by the forms and pubescence of the leaves.

‡ [6] Leaves very veiny, crenate or serrate, glaucous beneath, either quite smooth, or downy beneath; caps. almost sessile, pubescent; style moderate; much branched, dwarf, alpine, or sub-alpine shrubs.

27. S. *arbúscula.* "catkins pedunculate; peduncle leafy; caps ovato-conical,
S. 4-6. S.-1. tomentose, sessile, ultimately on a very short stalk; nectary reaching beyond the base of the caps.; style elongated, often cloven half way down; stigmas bifid; leaves smooth, lanceolate-acute, or ovate-obtuse at the base and apex, with a short point remotely or densely serrate, shining above, of a dull glaucous hue beneath. (*Kock. Syn*)."—Highlands.

α. *vacciniifólia.* "leaves lanceolate-ovate, serrated, glabrous and even above, glaucous and silky beneath; caps. ovate, silky; stems decumbent."

β. *carináta.* "leaves ovate-serrated, glabrous, glaucous beneath, and frequently folded so as to form a keel; ov. sessile, oblong-ovate, extremely silky; style short; stigmas emarginate."

γ. *prunifólia.* "leaves ovate, serrated, more or less veiny, glabrous, glaucous beneath; ov. sessile, oblong-ovate, extremely silky; style short; stigmas emarginate."

δ. *venulósa.* "leaves ovate, serrated, naked, reticulated with prominent veins above, rather glaucous beneath; caps. ovate, silky; stem erect, much branched."

Elegant, much branched, dwarf shrubs.

‡ [7] Leaves rather broad, glaucous beneath; stip. very large, equal to, or longer than petiole; ov. nearly sessile, smooth; style elongated; scales remarkably villous.

28. S. *hastáta.* "leaves broadly elliptical, waved, thin, and crackling, quite
S. 5. S.-1. glabrous, glaucous beneath; stip. large, cordate, about as long as the foot-stalks; ov. on a short stalk, lanceolate, acuminate, glabrous; styles elongated; stigmas cloven; scales very shaggy, with long silky hairs;" (1½.)

The fertile catkins are distinctly pedunculate. This species is remarkable for its villous scales.

29. S. *lanáta.* leaves broad, elliptical, or ovate, entire, shaggy, especially
S. 5. S.-1. at the margin, or nearly smooth, glaucous and reticulated beneath; stip. as in the last; catkins terminal, (by the abortion of the leaf-buds at the extremities of the shoots, owing to frost—Fries), large, handsome, very villous; ov. nearly sessile, smooth; style elongated; (1).—Highland mountains.

Not unlike, at first sight, alpine forms of S. *caprea*, but in fructification widely different. Fries remarks that it often comes so near S. *hastata* as scarcely to be distinguished without the fruit.

ORDER LXXIV.—MYRICEÆ.

Shrubs with resinous glands, endowed with aromatic, astringent, and tonic qualities. Leaves alternate, simple. *Fl's in catkins, wanting cal. and cor.* Barren fl's:—Stam. 1-8, with a scale at base; anth. 2-4-celled. Fertile fl's:—*Ov. superior, 1-celled,* surrounded by several hypogynous scales, *with a solitary, erect, ovule;* stigmas 2, subulate. Fruit becoming fleshy with the adherent, hypogynous scales of ov. Seed solitary; embr. exalb.; *rad. superior,* short.

1. MYRI'CA. *L.* Gale.

Scales of catkin concave. Stam. 4-8. Fruit drupaceous.

1. M. *Gále.* *S.* 5. (G.)	16.	Stem shrubby; leaves lanceolate, broader upwards, serrated; catkins sessile, erect.—Bogs.

ORDER LXXV.—ELEAGNEÆ.

Trees, or shrubs, usually covered with a leprous scurf, having entire exstipulate leaves, and possessing slightly narcotic properties. *Fl. mostly diœcious.* Barren fl's:—catkins, each with a scale-like bract at base. Sep. 2-4, sometimes united into a cup. Anth. 3, 4 or 8, sessile, 2-celled. Fertile fl's:—Cal. tubular, with a fleshy disk, the limb entire, or 2-5-toothed. *Ov. superior,* simple, 1-celled; *ovule solitary, ascending,* stalked, anatropal; stigma simple, subulate, glandular. Fruit crustaceous, enclosed within the fleshy cal. Seed erect; *embr. straight, in a thin, fleshy alb.*; *rad. short, inferior.*

1. HIPPO'PHAE. *L.* Sallow-thorn.

Diœcious. *Barren fl's:*—Sep. 2, adhering by their points. Anth. 4. *Fertile fl's:*—solitary; cal. cloven at summit. Stigma subulate, exserted.

H. *rhamnoides.* *S.* 5. (Br.)	E.-4.	Thorny, with linear, lanceolate, scattered, silvery leaves; fl's very small, appearing with the young leaves.—East coast.

ORDER LXXVI.—URTICEÆ.

Trees, but mostly shrubs or herbs, with *a limpid,* caustic, or narcotic *juice.* Leaves rough, *stipulate,* often stinging. *Fl's not in catkins.* Cal. membranous, lobed, persistent. Barren fl's:—Stam. definite, distinct, on cal.; fil. incurved in æstivation, elastically recurved when the anther bursts. Fertile fl's:—sometimes in spikes or cones. *Ov. superior, simple; ovule solitary, erect, or pendulous;* stigma simple, fringed or bifid. Fruit indehiscent. *Embr.* straight, *with a small, fleshy alb., or* 0; or hooked or coiled; cot. flat; *rad. superior.*

Plant not twining. Stigma simple.		
Style filiform. Fl's polygamous.	. . . .	**1. PARIETARIA.**
Stigmas sessile. Fl's monœcious.	. . . .	**2. URTICA.**
Plant twining. Stigmas 2, filiform.	. . . .	**3. HUMULUS.**

Tr. I. *URTICIDÆ.* *Seed erect, albuminous; embr. straight.*

1. PARIETA'RIA. *L.* Wall-pellitory.

Fl's polygamous, surrounded by an invol. Cal. 4-parted. Stam. 4. Style filiform; stigma hairy.

1. P. *officinális.* *P.* 6-9. (p. G.) 19. Leaves ovate-lanceolate, 3-ribbed, but not to the base; invol. 7-fl'd, of 2 bracts, the central one fertile, each bract with 7 ovate segments.—On old walls.

2. URTI'CA. *L.* Nettle.

Fl's monœcious. *Barren fl's:*—Cal. 4-leaved. Stam. 4. *Fertile fl's:*—in capitate racemes. Sep. 2. Stigma sessile.

* Fertile fl's in globose heads. Leaves opposite,

1. U. *pilulífera.* *A.* 6-8. (—G.) E. I.-2. ovate or slightly cordate, acuminate, serrated; stip. oblong-ovate.—Near sea; Norfolk. Suffolk. Bantry.
2. U. *Dodártii.* *A.* 6-8. (—G.) E.-1. Leaves ovate, or ovate-lanceolate, nearly entire; stip. lanceolate.—East of England.

* Fertile fl's in axillary spikes. Leaves opposite,

3. U. *úrens.* *A.* 6-9. (—G.) 20. elliptical, serrate; fl. monœcious; spikes nearly simple, in pairs, shorter than petioles.—Waste ground.
4. W. *dioíca.* *P.* 6-9. (—G.) 20. Leaves ovate, cordate, serrate, acuminate; fl. diœcious; spikes panicled, longer than petioles.—Waste ground.
   β. *angustifólia.* leaves ovate-lanceolate, rounded at base.

Tr. II. *CANNABINIDÆ.* *Seed suspended, without alb.; embr. spiral.*

3. HU'MULUS. *L.* Hop.

Diœcious. *Barren fl's:*—racemose. Cal. 5-parted. Stam. 5. *Fertile fl's:*—in lax, membranous cones.

H. *Lupúlus.** *P.* 7. (g. Y.) 17. I.-4. Stems long, weak, and climbing, scabrous; leaves petiolate, opposite, 3-5-lobed, serrated, rough.—Thickets.

ORDER LXXVII.—CERATOPHYLLEÆ.

Submersed herbs, with cellular, verticillate, forked leaves. Fl's monœcious. *Cal. inferior*, many-parted. Anth. 12-20, sessile, 2-celled. *Ov. simple*, superior, 1-*celled;* ovule solitary, pendulous; style pervious; stigma filiform, oblique. Fruit 1-seeded, indehiscent, crowned with the hardened stigma. Seed 1; *alb.* 0; *embr. with* 2 *cot., a large, many-leaved plumule, and an inferior radicale.*

1. CERATOPHY'LLUM. *L.* Horn-wort.

1. C. *demérsum.* *P.* 7. 2. Fruit armed with 2 spines near the base, terminated by the curved, subulate style; segments of cal. notched at end.—Ponds, &c.
2. C. *submérsum.* *P.* 9. E. S.-2. Fruit without spines, terminated by the short, curved styles; cal.-segments acute, entire.—Ponds.

ORDER LXXVIII.—CALLITRICHINEÆ.

Small *aquatic herbs*, with opposite, entire leaves. *Fl's axillary, solitary, monœcious*, with 2 coloured bracts, rarely 0. Cal. and cor. 0. Stam. 1; fil. filiform; anth. 1-celled, 2-valved. Ov. *4-cornered, 4-celled, with solitary, suspended ovules; placentæ axile;* styles 2, subulate. Fruit 4-celled, 4-seeded, indehiscent. Seeds peltate; *embr.* inverted, *in axis of fleshy alb.*; *rad.* very long, *superior.*

2. CALLITRI'CHE. *L.* Water-starwort.

* Bracts 2, falcate; fruit nearly sessile, tetragonal,

1. C. *vérna.* — each portion bluntly keeled at back; styles always erect;
A. 4, 5. (G.) — 20. leaves connate.—Still water.

2. C. *platycárpa.* — Carpels slightly winged at back; styles erect in bud, at
A. 6, 7. (G.) — ? length reflexed.—Muddy places.

* Bracts 0; lobes of fruit keeled, or winged.

3. C. *pedunculáta.* — Fruit stalked, regularly tetragonal; styles divaricate in fl.;
A. 6. (G.) — ? leaves linear.—Marshes.

β. séssilis. — fruit sessile; upper leaves ovate-spathulate.—Lakes.

4. C. *autumnális.* — Fruit nearly sessile; lobes diverging, acutely winged at
A. 6-10. (G.) — ? back; style spreading; leaves linear, broader at base.—Ditches.

ORDER LXXIX.—EUPHORBIEÆ.

Trees, shrubs, or herbs, often with an acrid milk, which is frequently vesicating and poisonous. Leaves rarely compound, often stipuled. Fl's usually monœcious, sometimes enclosed in a synphyllous involucel, resembling a cal. Cal. lobed or 0. Pet. sometimes present. Stam. 1 or more; anth. opening by pores. *Ov. free, sessile or stalked, 2-3-celled;* styles as many as cells; *placentæ axile.* Fruit mostly of 3 carpels, separating elastically from the common axis, sometimes fleshy. *Seeds solitary, or twin, suspended; embr. in a fleshy alb.*; rad. superior.

Styles 2. Cal. 3-parted.	1. MERCURIALIS.
Styles 3.	
The numerous stam., and the single pistil, placed within a calyx-like involucel. Sep. and pet. 0. . . .	2. EUPHORBIA.
Barren and fertile fl's with both cal. and pet. . . .	3. BUXUS.

1. MERCURIA'LIS. *L.* Mercury.

Cal. 3-parted. *Fertile fl's:*—Ov. 2-celled; ovules solitary. Styles 2. *Barren fl's:*—Stam. 9-12; anth. of 2 globose lobes.

1. M. *perénnis.* — Stem perfectly simple; leaves rough, ovate-oblong; fertile
P. 4, 5. (—G.) — 20. fl's on long stalks; root creeping.—Shady places.

2. M. *ánnua.* — Stem with opposite branches; leaves glabrous, ovate-
A. 8, 9. (G.) — 12. oblong; fertile fl's nearly sessile; root fibrous.—Waste places.

β. ambígua. — leaves lanceolate; fl's whorled.

2. EUPHO'RBIA. *L.* Spurge.

Cal. and cor. 0. *Fertile fl's:*—Ov. 3-celled, with solitary ovules; styles 3. *Barren fl's,*—numerous, of single stam., placed, along with the pistil, within a cam-

panulate involucel, the limb of which is in 4 or 5 segments, having as many conspicuous glands of various forms between the segments.

* Glands of involucel rounded, oval or reniform, not lunate or toothed.

† Fl. solitary, axillary; stem procumbent, forked; leaves stipuled,

1. E. *Péplis.* *A.* 7-9. (r. Y.) E.-2. — opposite half-cordate, nearly entire; glands of involucel with small scales beneath; caps. smooth.—South sea-coast.

† Fl. in umbels of mostly 5 principal branches; stems erect; leaves not stipuled.

‡ [1] Caps. perfectly smooth; seeds reticulated and pitted.

2. E. *helioscópia.* *A.* 6-9. (g. Y.) 20. — Bracts and leaves membranous, obovate-cuneate, serrated upwards.—Waste ground.

‡ [2] Caps. warted or tuberculated, not hairy or woolly; seeds smooth.

3. E. *platyphýlla.* *A.* 7, 8. (g. Y.) E.-6. — Bracts cordate, mucronate, and, as well as the obovate-lanceolate acute leaves, finely serrated.—Corn-fields.

β. *stricta.* — leaves narrower; invol. hairy.—Tintern.

4. E. *Hibérna.* *P.* 6. (—G.) E. I.-1. — Bracts and leaves ovate or elliptical, obtuse, entire.—Bushy places; Devon. Down. Donegal. Cork. Kerry.

‡ [3] Caps. hairy or woolly.

5. E. *pilósa.* *P.* 5, 6. (—Y.) E.-1. — Bracts all elliptical, glabrous; leaves elliptic-lanceolate, minutely serrate, slightly hairy beneath; caps. warted, hairy.—Prior-park lane, Bath.

6. E. *corallóides.** *B.*? (—Y.) E.-1. — Bracts ovate-oblong, the partial ones ovate, hairy; leaves lanceolate, minutely serrate, hairy on both sides; caps. not warted, woolly.—Slinfold, Sussex.

* Glands of involucel crescent-shaped or toothed.

† The opposite bracts connate, rounded; umbel of 5 or more branches;

7. E. *amygdaloides.* *P.* 3, 4. (—Y.) E. I.-9. — Leaves ovate-lanceolate, hairy beneath, attenuated at base, entire; caps. minutely warted; seeds smooth.—Woods.

† Bracts separate.

‡ Umbel of 5 or more principal, 2-fid branches.

§ Umbel of numerous branches.

8. E. *Cyparíssias.** *P.* 6, 7. (g. Y.) E.-3. — Bracts cordate, acute; leaves linear, entire; ov. roughish with dots; seeds smooth.—Woods.

9. E. *E'sula.** *P.* 7. (—Y.) E. S.-3. — Bracts cordate, obtuse, mucronate; leaves lanceolate, denticulate; ov. smoothish; seeds smooth.—Woods.

§ Umbels of but 5 principal branches.

10. E. *Parálias.* *P.* 8, 9. (—Y.) 3. — Glands of involucel 5; leaves coriaceous, imbricated, elliptic-oblong, glaucous, obtuse; seeds smooth.—Sea-coast.

11. E. *Portlándica.* *P.* 7-9. (—Y.) 3. — Glands of involucel 4; leaves membranous, spreading, obovate-lanceolate, apiculate; seeds pitted.—Sea-coast.

‡ Umbels of 3 or 4 principal forked branches.

§ Leaves alternate, scattered; seeds rough.

12. E. *Péplus.* *A.* 7, 8. (—Y.) 20. — Bracts ovate; leaves broadly obovate; caps. smooth, with rugose keels; seeds dotted.—Waste ground.

13. E. *exígua.* *A.* 7. (—Y.) 16. — Bracts, as well as the leaves, linear-lanceolate; caps. nearly smooth; seeds warted and netted.—Corn-fields.

§ Leaves in whorls of 4; seeds smooth.

14. E. *Láthyris.** *B.* 6, 7. (—Y.) E. S.-2. — Bracts ovate-subcordate, acuminate; leaves oblong-lanceolate; upper cordate at base; ov. glabrous.—Thickets.

3. BU'XUS. *L.* Box.

Barren fl's :—Cal. 3-parted. Pet. 2. Stam. 4. Fertile fl's:—Cal. 4-parted. Pet. 3. Caps. 3-celled; cells 2-seeded.

1. B. *sempervivens.* *S.* 4-6. (—Y.) E.-5. Leaves ovate-oblong, coriaceous, shining, the petioles slightly hairy; anth. ovate-sagittate.—Dry hills.

ORDER LXXX.—EMPETREÆ.

Small shrubs with heath-like, exstipulate leaves, having acid properties. *Fl's axillary.* Cal. of several hypogynous scales, arranged in two rows, the inner sometimes petaloid, and rarely combined. Barren fl's:—Stam. as many as the inner row of sep., and alternate with them; anth. roundish, of 2 distinct cells, bursting longitudinally. Fertile fl's:—*Ov.* in a fleshy disk, 3, 6, or 9-*celled;* style 1; *stigma with as many rays as cells in ov.*; *placentæ axile. Fruit* fleshy, 3, 6, or 9-celled, *with solitary, ascending seeds. Embr.* taper, *in* axis *of a fleshy alb.*; *rad. inferior.*

1. EMPE'TRUM. *L.* Crow-berry.

Cal. of 3 green and 3 petaloid pieces. *Barren fl.* :—Stam. 3. *Fertile fl.* :—Stigma nearly sessile, with 6-9 rays. Berry 6-9 seeded.

1. E. *nigrum.* *S.* 5. (P.) 10. Procumbent; leaves linear-oblong, their margins recurved, so as to meet in a white line beneath.—Heaths.

ORDER LXXXI.—CUCURBITEÆ.

Herbs climbing by means of tendrils, with palmate, succulent, hispid leaves, possessing more less of acrid and drastic properties, which are lost by cultivation. Cal. 5-toothed. *Cor. sympetalous,* 5-cleft. Stam. 5, 4 of the fil. often cohering in pairs; anth. 2-celled, very long and sinuous. *Ov. inferior,* 1-*celled, with* 3 *parietal placentæ,* which often project into the cavity, unite in the centre, and divide it into 3 cells; styles short; stigmas thick, velvety, fringed. *Fruit pulpy.* Seeds mostly numerous, flat; *alb.* 0; embr. flat; cot. foliaceous; rad. next hilum.

1. BRYO'NIA. *L.* Bryony.

Pet. cohering at base. *Barren fl.* :—Cal. 5-toothed: stam. 5, in 3 parcels (2, 2, and 1). *Fertile fl.* :—Style 3-fid. Fruit a globose, many-seeded berry.

1. B. *dioica.* *P.* 5-9. (+W.) E.-11. Fl. diœcious; leaves palmate, 5-lobed, toothed, rough on both sides; cal. of the fertile fl. half as long as cor.—Thickets.

DIVISION VI.—GYMNOSPERMOUS DICLINOUS EXOGENS.

Seeds not enclosed in a pericarp. The ovule fertilized directly through the foramen without the intervention of a style or stigma. The woody vessels, as seen through the microscope, exhibiting numerous discoid spots, each with a central apparent perforation.

ORDER LXXXII.—PINEÆ OR CONIFERÆ.

Much branched trees or evergreen shrubs, abounding in resin, turpentine, and balsam, *with narrow, rigid, entire leaves.* Cal. and cor. 0. Fl. mon- or diœcious. *Barren fl:*—Stam. 1, or more and monadelphous, collected into a deciduous catkin, round a common axis. Fertile fl's:—solitary, or in cones. Ov. spread open, scale-like, destitute of style and stigma, arising from the axis of a membranous bract; ovule erect, naked, sometimes seated in an envelope, which in *Taxus* is succulent. Nuts either solitary and naked, or enclosed within the hardened scales of a woody cone. Embr. straight, in axis of fleshy alb; cot. subulate, from 2 to 10 in number; rad. superior.

Fertile fl's solitary.	1. TAXUS.
Fertile fl's in catkins or cones.	
Stam. 4-7.	2. JUNIPERUS.
Stam. 2.	3. PINUS.

Tr. I. *TAXIDÆ.* Fertile fl's *solitary, naked, or bracteated.*

1. TA'XUS. *L.* Yew.

Catkins of *barren fl's* oval. Stam. numerous; anth. 4-6-celled. *Fertile fl's:*—scaly below. Seed immersed in a fleshy disk.

1. T. *baccáta.* *T.* 3, 4.	20.	Fl. axillary, sessile; leaves 2-ranked, crowded, linear acute; fruit roundish, drupe-like.—Woods.
β. fastigiáta.		leaves scattered; fruit oblong.—Giant's Causeway.

Tr. II. *CUPRESSIDÆ.* Fertile fl's *few, in a small catkin or cone. Ovules pointing from the axis.*

2. JUNI'PERUS. *L.* Juniper.

Stam. 4-7, on lower edge of scale; anth. 1-celled. Scales of fertile catkins imbricated, lower ones barren. Ovules 3, surrounded by a 3-fid, fleshy invol., formed of the 3 uppermost connate scales of the catkin.

1. J. *commúnis.* *S.* 5.	17.	Leaves 3 in a whorl, spreading or imbricated, linear, mucronate, keeled, longer than ripe fruit.—Dry hills.
β. nána.		leaves broader, incurved; stem procumbent.

Tr. III. *ABIETIDÆ.* Barren fl's *in catkins. Stam.* 2; *anth.* 1-*celled, adnate to under sides of scale.* Fertile fl's *in cones. Ovules in pairs, pointing towards the axis.*

3. PI'NUS. *L.* Fir.

Barren catkins crowded, racemose. Carpels (scales of cone) thickened and angular at end. Seeds with a crustaceous, winged coat.

1. P. *sylvéstris.* *T.* 5, 6.	S.-5.	Leaves rigid, in pairs; cones ovate, acute, when young stalked, recurved, in pairs as long as leaves.—Highlands.

CLASS II.—ENDOGENS OR MONOCOTYLEDONS.

STEM not formed of distinct bark, wood and pith; when cut transversely, no radiating lines are seen, the woody tubes being scattered indiscriminately through the cellular tissue. In consequence of the stem growing by the successive intrusion of new wood at the centre, it is found to be denser at the circumference than the interior. Leaves with parallel ribs, often connected by transverse ones, but very rarely reticulated. Fl's mostly 3-nary. Embryo with 1 cotyledon, the radicle in germination having to burst through the substance of the embryo.

SUB-CLASS VI.—PERIGYNOUS ENDOGENS.

ENDOGENS having the tube of the cal. adherent to the ovary.

ORDER LXXXIII.—HYDROCHARIDEÆ.

Water plants, sometimes with spiny leaves. *Fl's* mostly *diclinous*, issuing from a spathe. *Sep.* 3, *herbaceous*. *Pet.* 3, petaloid, *inserted with the stam. on cal.*, sometimes 0. Ov. compound 1, 6, 8 or 9-celled; stigmas 3-6; placentæ often parietal. Fruit indehiscent, 1 or more celled. Seeds numerous; *alb.* 0; embr. straight, cylindrical, undivided; plumule small, lateral; rad. remote from hilum.

Spathe 2-fl'd; stam. 9-12.	1. HYDROCHARIS.
Spathe 1 fl'd; stam. 20.	2. STRATIOTES.

1. HYDROCHA'RIS. *L.* Frog-bit.

Diœcious; *barren fl's*,—spathe 2-parted, 3-fl'd; stam. 9-12. *Fertile fl.*,—spathe 1-fl'd; stigmas 6, wedge-shaped, bifid.

H. *morsus-ránæ*. Floating and creeping; leaves stalked, roundish, reniform, *P.* 7, 8. (W.) S.? E. L.-12. entire; fl's sub-umbellate.—Ponds.

2. STRATIO'TES. *L.*

Imperfectly diœcious; spathe 2-parted, 1-fl'd. Stam. about 20, on top of tube of perianth.

1. *aloides*. Leaves sword-shaped, triangular, rigid, spinosely serrate; *P.* 7. (W.) S.? E.-8. scape 2-edged; root creeping.—Lakes and ditches.

ORDER LXXXIV.—ORCHIDEÆ.

Herbs, rarely shrubs, with unimportant properties. Root fasiculated, of fleshy tubers, or fibrous. *Fl's irregular*. Sep. 3, mostly coloured, 2 usually inferior,

1 superior. *Pet.* 3, 2 usually superior, and 1 *inferior* called *the lip*, which is larger than the others, and *generally of a very fantastic form. Stam.* 3, *united with the pistil to form the column, the* 2 *lateral abortive, the middle fertile;* or in Cypripedium, the middle alone abortive; pollen powdery, or collected into an indefinite number of grains or wedges, or consolidated into masses of a waxy texture, and definite in number. *Ov.* 1-*celled, with* 3 *parietal placentæ;* stigma a viscid space in front of the column, its upper edge often furnished with 1 or 2 glands, or extended into a beak, or otherwise deformed. Caps. usually 6-valved, 3 only seminiferous. Seeds indefinite; testa loose, netted; embr. solid, fleshy; *alb.* 0 (Lindl.); rad. next hilum.

* Lip of cor. slipper-shaped. Anth. 2.	15. CYPRIPEDIUM.
* Lip not slipper-shaped. Anth. 1.	
† Lip produced into a free spur beyond the base.	
‡ Sep. and pet. all converging.	7. HABENARIA.
‡ Lip distant from the other pet. and sep.	
Lower lobe of lip rounded, entire.	5. GYMNADENIA.
Lower lobe of lip notched or truncate.	4. ORCHIS.
† Lip not spurred at base,	
‡ entire.	
§ The 2 lateral sep. and small lip uppermost.	2. MALAXIS.
§ The 2 lateral sep. and lip undermost.	
‖ Column nearly as long as sep.	1. LIPARIS.
‖ Column much shorter than sep.	
Sep. herbaceous.	10. GOODYERA.
Sep. petaloid.	11. SPIRANTHES.
‡ Lip more or less lobed, notched or toothed.	
§ Plant destitute of leaves.	
Stem with a few brown, scaly sheaths.	12. NEOTTIA.
Stem with a few green, herbaceous sheaths	3. CORALLORHIZA.
§ Plant with green leaves.	
‖ Lip divided transversely into 2 lobes.	14. EPIPACTIS.
‖ Lip not divided transversely.	
¶ Sep. and pet. converging into a hood.	6. ACERAS.
¶ Sep. and pet. all spreading.	
** Pet. all similar in form, herbaceous.	8. HERMINIUM.
** Lip very unlike the other pet.	
Pollen granular.	13. LISTERA.
Pollen in masses.	9. OPHRYS.

N. B. The following is Dr. Lindley's arrangement of this order:—

Tr. I. *MALAXIDÆ. Anth. single. Pollen cohering in grains or masses, which are definite in number, and waxy, and without a caudicle or stigmatic gland.*

1. LI'PARIS. *Rich.*

Sep. and pet. spreading, the lip much larger than sep., and undermost. Column nearly as long as sep. Pollen-masses 4.

1. L. *Lœsĕllii.* *P.* 7. (y. G.) E.-1. Leaves 2, broadly lanceolate; scape triangular; lip channelled, entire.—Sandy bogs.

2. MALA'XIS. *Sw.* Bog-Orchis.

Sep. spreading. Pet. herbaceous, smaller than the sep., the lip and 2 lateral sep. uppermost. Column short. Pollen-masses 4.

1. M. *paludŏsa.* *P.* 7-9. (—G.) 7. Stem with 3-5 oval, very concave leaves, papillose at the extremity; lip concave, acute.—Bogs.

3. CORALLORHI'ZA. *Hall.* Coral-root.

Sep. and pet. spreading, the lower sep. cohering at base. Sep. spurred at base; spur adnate with ov. Column elongated, entire; stigma triangular.

1. C. *innáta.* Spur very short; lip slightly 3-lobed; root of thick, fleshy, much-branched fibres.—Boggy woods.
P. 7 (—Y.) S.-1.

Tr. II. *OPHRYDIDÆ. Anth. single, terminal, erect. Pollen powdery, or collected into an indefinite number of grains.*

4. O'RCHIS. *L.*

Sep. and pet. converging into a hood. Lip 3-lobed, spurred. Glands of the stalks of the pollen grains contained in a common pouch.

* Lower lobe of lip divided or notched. Tubers of root entire.

† Lip with a small point in the notch.

1. O. *máscula.* Spur rather longer than ov.; lobes of lip all broad, somewhat crenate; sep. acute, the 2 lateral ones reflexed upwards.—Pastures.
P. 6. (P.) 20.

2. O. *militáris.* Spur about ½ as long as ov.; lateral lobes of lip oblong; middle one dilated towards the end, with a central hispid line; sep. acuminate, converging, including the pet.—Chalk-fields.
P. 5. (P. * W.) E.-1.

β. *fúsca.* middle lobe of lip large, obcordate, crenate; segments ovate, sub-truncate; sep. rather obtuse.

γ. *mácra.* lip with crystalline points; lobes linear, the middle one with 2 long, narrow segments.

† Division of the middle lobe of lip without a point.

‡ Segments of lip broad and shallow.

3. O. *Mório.* Spur ascending, obtuse, nearly as long as ov.; sep. and pet. obtuse, conniving into a helmet; bracts 1-nerved.—Meadows.
P. 5, 6. (P. ∴) E. L.-15.

4. O. *laxiflóra.* Spur emarginate, much shorter than ov.; lateral sep. reflexed; upper pet. connivent; bracts 3-nerved.—Boggy places.
P. 5, 6. (P.) C.

‡ Segments of lip narrow and deep.

5. O. *ustuláta.* Middle lobe of lip in 2 linear-oblong segments; sep. converging, acute, including the lateral pet.—Chalky downs.
P. 6. (W. ∴ P.) E.-10.

6. O. *hircína.* Middle lobe of lip very long, linear, twisted, notched at the end; lateral shorter, wavy; sep. connivent, including the small linear pet.—Hills, Kent. Surrey.
P. 7. (—P. &. W.) E.-1.

* Middle lobe of lip undivided, entire.

† Spur filiform, subulate, longer than ov.; tubers of root undivided.

7. O. *pyramydális.* Lip with 3 equal lobes, and 2 tubercles at the base above; sep. spreading, acuminate.—Chalky pastures.
P. 7. (r. P.) 12.

† Spur cylindrical, shorter than ov.; tubers palmated.

8. O. *latifólia.* Lip obscurely 3-lobed, its sides reflexed, crenate; sep. patent; pet. connivent; leaves not spotted.—Marshes.
P. 5. (P.) 20.

9. O. *maculáta.* Lip 3-lobed, flat, crenate; 3 sep. patent; pet. connivent; leaves usually spotted.—Heaths.
P. 5, 6. (—P. ‖ P.) 20.

5. GYMNADE'NIA. *Br.*

Sep. and pet. converging into a hood. Lip 3-lobed, spurred. Glands of the stalks of the pollen-masses naked, approximated.

1. G. *conópsea.* *P.* 6, 7. (y. W.) 19. Tuber of root palmate; lobes of lip equal, entire, obtuse; spur filiform, twice as long as ov.—Hilly pastures.

6. A'CERAS. *Br.* Man-orchis.

Sep. and pet. forming a hood; lip hanging down, not spurred. Glands of the stalks of the pollen-masses enclosed in a common pouch.

1. A. *anthropóphora.* *P.* 6. (g. Y.) E.-2. Lip longer than ov., 3-parted; segments linear, middle one bifid.—Dry, chalky places.

7. HABENA'RIA. *Br.*

Sep. and pet. hooded; lip 3-lobed, or entire, spurred. Glands of the stalks of the pollen-masses not enclosed in a pouch.

* Spur much shorter than ov.

1. H. *álbida.* *P.* 6, 7. (y. W.) 8. Lip in 3 deep, acute lobes, the middle lobe longest; spur obtuse, entire; tubers of root undivided, clustered.—Hilly pastures.
2. H. *víridis.* *P.* 6, 7. (g. Br.) 13. Lip linear, flat, 3-pointed, the middle point the shortest; spur 2-lobed; tubers palmate.—Pastures.

* Spur twice as long as ov.

3. H. *bifólia.* *P.* 6, 7. (W.) 19. Lip entire, lanceolate, obtuse; pet. connivent, obtuse; root-leaves 2, oblong-obovate, attenuated at base; anth.-cells parallel.—Heaths.
   β. *chlorántha.* anth.-cells diverging at base; fl's green.

8. HERMI'NIUM. *Br.* Musk-orchis.

Sep. and pet. erect. Lip 3-lobed, not spurred. Anth.-cells parallel. Glands of the stalks of the pollen-masses naked.

1. H. *monórchis.* *P.* 6, 7. (G.) E.-3. Root-leaves 2, lanceolate; middle lobe of lip longest; tubers of root 2, very unequal.—Chalky soil.

9. O'PHRYS. *L.*

Pet. smaller than sep., both spreading; lip convex, not spurred, variously lobed. Pollen-masses with 2 glands, each enclosed in a distinct pouch.

* [1] Lip 4-lobed, with an intermediate tube or appendage.

1. O. *apífera.* *P.* 6, 7. (Br. * Y.) E. I.-11. Lip as long as cal., tumid, 5-lobed, the terminal one subulate, reflexed; anth. elongated, with a hooked point; pet. oblong, downy.—Calcareous soils.
2. O. *arachnites.* *P.* 4-6. (+P. * Y.) E.-1. Sep. longer than cal., somewhat tumid, of 5 obscure, inflexed lobes, the terminal one flat, rather cordate; anth. as last; pet. deltoid, downy.—Kent.

* [2] Lip 4-lobed, without an intermediate one.

3. O. *aranífera.* *P.* 4, 5. (Br. ‖) E.-6. Lip as long as cal., tumid, clothed with dense short hairs, obscurely 4-lobed; anth. acute; pet. glabrous.—Chalky places.

β. *fucífera.* lip longer than cal., obovate, undivided, with a spreading, wavy margin; pet. scabrous.

4. O. *muscífera.* Lip twice as long as cal., with 4 expanded lobes, its disk
P. 5, 6. (br. P.) E. I-.1. pale, polished; anth. obtuse; lateral pet. filiform.—Damp soil.

Tr. III. *NEOTTIDÆ. Anth. single, fertile, hinged, dorsal. Pollen powdery, or granular.*

10. GOO'DYERA. *Br.*

Sep. spreading, ovate, herbaceous, including the saccate base of the lip, which is entire at the end. Column free, with 2 teeth at apex; stigma prominent, roundish. Pollen angled.

1. G. *répens.* Lower leaves petiolate, ovate; sep., pet., and lip ovate-
P. 8. (W.) S.-2. lanceolate; spike spiral; root creeping.—Fir woods.

11. SPIRA'NTHES. *Rich.* Lady's-tresses.

The coloured sep. and pet. converging. Lip channelled, clawed, fringed with 2 fleshy projections at base. Column clavate, with 2 teeth at apex; stigma prominent, prostrate.

1. S. *autumnális.* Root-leaves oblong, those of stem bract-like; spike dense,
P. 8, 9. (g. W.) E. I.-13. 1-sided, spiral; tubers ovate-oblong.—Dry places.

2. S. *æstivális.* Root-leaves oblong-lanceolate, those of stem narrow; spike
P. 7, 8. (b. W.) E.-1. lax, 1-sided, spiral; tubers cylindrical.—New Forest, Hants.

3. S. *gemmípara.* Leaves lanceolate, as tall as stalk; spike 3-ranked, twisted;
P. 8. I.-1. bracts smooth.—Bog, Bearhaven.

12. NEO'TTIA. *L.* Bird's-nest.

Sep. and pet. brown, converging; lip dependant, 2-lobed, concave at base. Column elongated, taper, erect; stigma 2-lipped. Anth. not hooded.

N. *Nidus-A'vis.* Stem with brown scales, without true leaves; lip linear-
P. 5, 6. (Br.) F.-14. oblong, with 2 spreading lobes.—Woods.

13. LI'STERA. *Br.* Tway-blade.

Sep. and pet. herbaceous, spreading; lip. dependant, 2-lobed. Column taper, erect, very short; stigma plane, ovate. Anth. covered by a hood.

1. L. *ováta.* Leaves 2, ovate; lip bifid, not toothed at base; column
P. 5, 6. (y. G.) 20. with a crest, in which is placed the anth.—Woods.

2. L. *cordáta.* Leaves 2, cordate; lip bifid, with 2 lateral teeth at base;
P. 6-8. (g. Br.) 8. column without a crest.—Moors.

Tr. IV. *ARETHUSIDÆ. The intermediate anth. fertile, terminal, hinged. Pollen powdery or granular.*

14. EPIPA'CTIS. *Swartz.* Helleborine.

Sep. and pet. coloured, all converging; lip concave at base, the extremity undivided or 3-lobed, the middle lobe large, articulated. Column 2-toothed at apex. Pollen-masses acuminate.

* Ov. straight, on a twisted stalk; column short; stigma beaked.

1. E. *latifólia.* *P.* 7, 8. (g. P.) 18. Bracts, particularly the lower, longer than the drooping fl's; leaves broadly ovate; lip shorter than sep. and pet., its terminal lobe entire, with a minute point.—Mountainous woods.

β. *média.* (p. G.) leaves ovate-oblong, upper lanceolate; lip as long as sep. and pet., terminal, triangular-cordate.

γ. *purpuráta.* (y. G.) leaves ovate-lanceolate; lip shorter than sep. and pet.; terminal lobe as last, crenate above.

δ. *ovális.* (+R.) leaves ovate-oblong; upper bracts shorter than fl., the lower than fruit; lip as long as sep. and pet.

2. E. *palústris.* *P.* 7. (W. ‖ R.) 15. Bracts shorter than the slightly drooping fl's; lip longer than sep. and pet., its terminal lobe roundish, crenate, obtuse.—Moist places.

* Ov. twisted, on a straight stalk; column elongated; stigma not beaked.

3. E. *grandiflóra.* *P.* 6. (W.) E. I.-5. Bracts longer than the glabrous ov., or the fl's; leaves ovate-lanceolate, acuminate.—Woods.

4. E. *rubra.* *P.* 5, 6. (R. W.) E.-1. Bracts longer than the downy ov.; leaves lanceolate; lip acuminate, as long as pet.—Hilly woods.

5. E. *ensifólia.* *P.* 5, 6. (W.) 5. Bracts subulate, very minute; ov. glabrous; leaves lanceolate, much acuminated; lip obtuse, shorter than sep. and pet.—Mountain woods.

Tr. V. *CYPRIPEDIDÆ. The 2 lateral anth. fertile.*

15. CYPRIPEDIUM. *L.* Lady's-slipper.

Lip large, inflated. Column terminated at the back by a petaloid lobe, representing a barren stam. between the 2 anth. The 2 lateral sep. often combined.

1. C. *calcéolus.* *P.* 6. (P. & Y.) E.-2. Stem leafy; columnar appendage nearly oval; lip shorter than sep., calceolate.—Woods in the North.

ORDER LXXXV.—IRIDEÆ.

Mostly herbs, possessing slightly stimulating, or nauseating properties. Root tuberous or fibrous. Fl. issuing from a spathe. *Perianth 6-parted, petaloid,* in 2, often unequal rows, *imbricated. Stam.* 3, *arising from,* and opposite to *the outer divisions of perianth.* Anth. turned outwards, 2-celled, bursting longitudinally, attached by their base. Ov. of 3, many-seeded cells; placentæ axile; stigmas 3, often petaloid. *Caps.* 3-celled, 3-valved, *with a loculicidal dehiscence; embr. enclosed in a fleshy or horny alb.,* the rad. always next the hilum.

3 outer segments of perianth reflexed; stigmas broad, petaloid. .	1. IRIS.
All the segments spreading; stigmas each 2-parted, filiform. .	2. TRICHONEMA.
All the segments erect; stigmas entire, thick at end. . .	3. CROCUS.

1. IRIS. *L.* Fleur-de-lis.

3 outer divisions of perianth reflexed, Stigma 3-parted, dilated, petaloid, covering the stam.

1. J. *Pseudácorus.* *P.* 6, 7. (Y.) 20. Leaves sword-shaped; stem round; perianth beardless, its inner segments smaller than stigmas.—Watery places.

β. *citrina.*	fl's smaller; segments of perianth narrower, its inner ones more acute, stem taller.
2. J. *fœtidissima.* *P.* 6, 7. (—B.) 10.	Leaves sword-shaped; stem 1-angled; perianth beardless, its inner segments spreading, equalling the stigmas.—Woods.

2. TRICHONE'MA. *Ker.*

Segments of perianth alike, regular, spreading. Stigmas 3, each 2-parted, the segments filiform.

1. T. *Bulbocódium.* *P.* 3, 4. (—P.) E.-1.	Scape 1-fl'd, slightly drooping; leaves filiform, compressed, channelled, longer than the scape; style shorter than stam.—Dawlish, Devon.

3. CRO'CUS. *L.*

Segments of perianth alike, regular, erect, funnel-shaped, with a long tube. Stigmas 3, entire, thick and convoluted; ov. subterraneous.

1. C. *vérnus.** *P.* 3. (P.) E.-4.	Leaves and fl's at the same time; stigma cut into 3 jagged, wedge-shaped lobes; throat of fl. hairy.
2. C. *nudiflórus.** *P.* 10. (—P.) E.-2.	Fl's appearing before the leaves; stigmas in 3 deeply laciniated, tufted segments, equalling stam.
β. *speciosus.*	stigma overtopping the stam.
3. C. *sativus.* *P.* 9. (—P.)	Scape in a sheath; stigma protruding beyond the fl., drooping.
4. C. *minimus.* *P.* 3. (P.)	Scape not in a sheath; stigma longer than stam.
5. C. *aureus.* *P.* 3. (Y.)	Scape not in a sheath; stigma shorter than stam.

The foregoing species of Crocus have no claims to be considered native. The last three, though introduced in the Floras, as found in meadows in several localities in England, are not even naturalized.

ORDER LXXXVI.—AMARYLLIDEÆ.

Plants mostly with bulbs, many highly poisonous. Leaves radical, ensiform. Fl usually issuing from a spathe. *Pet. and sep.* 6, *petaloid*, cohering, *regular*, *imbricated*, *bearing* 6, rarely more *stam.*, and often furnished with a cup-shaped nectary or crown surmounting the tube; *anth. opening inwards.* *Ov. inferior*, 3-celled, the cells rarely 1-2-seeded; style 1; stigma 3-lobed. Fruit either a 3-celled, 3-valved capsule, with a loculicidal dehiscence, or a 1-3-seeded berry. *Alb. fleshy or horny;* embr. nearly straight; *rad. next hilum.*

Perianth hypocrateriform, with a cup-shaped nectary at its throat.	1. NARCISSUS.
Nectary 0. Perianth campanulate, the segments equal. . .	2. LEUCOJUM.
Nectary 0. Perianth of 6 deep segments, the 3 outer the longest. .	3. GALANTHUS.

1. NARCI'SSUS. *L.* Daffodil.

Perianth hypocrateriform, the limb with 6 equal segments, having a cup-shaped crown surrounding the top of the tube. Stam. 3 short, and 3 long.

1. N. *poéticus.** *P.* 5. (W.)	E.-2.	Leaves linear, obtusely keeled; scape mostly 1-fl'd; crown short, concave, with a crenate, red margin.—Fields.
2. N. *biflórus.** *P.* 4, 5. (W.)	6.	Leaves linear, acutely keeled; scape mostly 2-fl'd; crown very short, concave, with a crenate, pale margin.—Sand fields.
3. N. *pseudo-narcissus.* *P.* 3-5. (Y.)	13.	Leaves linear, not keeled; scape 1-fl'd; crown as long as segments, campanulate, with a crisped, crenate margin.—Woods.

2. LEUCO'JUM. *L.* Snow-flake.

Perianth campanulate, the segments equal, thickened at the point. Stam. equal.

1. L. *æstivum,* *P.* 5. (W.)	E.-2.	Scape 2-edged; spathe many-fl'd; style thickened upwards; leaves long, linear, keeled.—Wet meadows.

3. GALA'NTHUS. *L.* Snow-drop.

Perianth deeply 6-parted, the 3 outer segments spreading, the 3 inner shorter, emarginate. Stam. equal.

G. *nivális.** *P.* 2, 3. (W.)	E. S.-11	Leaves 2, broadly linear, keeled, glaucous; scape with 1 drooping fl.—Thickets.

ORDER LXXXVII.—DIOSCOREÆ.

Twining shrubs, often acridly poisonous, with large tubers, having alternate, sometimes opposite *leaves* with *reticulated ribs, the wood of the roots arranged somewhat like the stem of an Endogen. Fl.* small, *diœcious,* spiked, bracteate. Perianth *herbaceous. Barren fl's:*—Stam. 6, on base of perianth; anth. turned inwards. *Fertile fl's:*—*Ov. adherent,* with 3, 1 or 2-*seeded cells;* style deeply 3-fid; ovules suspended. Fruit leafy, compressed or succulent. Seeds 1 or 2 in each cell; embr. small, near the hilum, *in a cavity within the cartilaginous alb.*

1. TA'MUS. *L.* Black Bryony.

Perianth campanulate; limb 6-parted. Ov. with 3 stigmas. Berry 3-celled.

1. T. *commúnis.* *P.* 6. (g. W.)	14.	Leaves cordate, undivided, acute; stem long, twining; root fleshy, acrid.—Thickets.

SUB-CLASS IV.—HYPOGYNOUS ENDOGENS.

ENDOGENS; having the ovary and calyx entirely free.

ORDER LXXXVIII.—TRILLIEÆ.

Herbs with simple stems and rhizomes, possessing poisonous, narcotic, acrid, or emetic properties. *Leaves* verticillate, *with netted ribs. Fl. perfect,* large, terminal. *Sep.* 3-4, *herbaceous. Pet.* 3, usually 4, *petaloid.* Stam. 6-10, hypogy-

nous. *Ov. free* 3, 4, *or* 5-*celled, with as many styles; placenta axile.* Fruit succulent 3-5-celled. Seeds numerous; *embr.* minute, *in a fleshy alb.*

1. PA'RIS. *L.* Herb Paris.

Sep 4, pet. 4, spreading, the latter narrower than the former. Stam. 8; anth. on middle of the subulate fil. Ov. of 5, several-seeded carpels.

1. P. *quadrifólia.* *P.* 5. (Y.) 15. Leaves ovate, usually 4 in a whorl, none at the root; sep. lanceolate; pet. subulate.—Damp woods.

ORDER LXXXIX.—LILIEÆ.

Herbs, shrubs, or trees, with fleshy or fibrous roots, yielding numerous drugs, possessing stimulating or acrid, emetic or purgative properties. Leaves with unbranched, mostly parallel ribs. *Fl.* almost *always perfect. Sep. and pet.* 6, rarely 4, *alike coloured*, regular, often cohering. Stam. as many as divisions of perianth, rarely 3; *anth. opening inwards. Ov. free*, 3-celled; *style* 1. Fruit succulent, or dry, 3-celled, mostly many-seeded; *embr.* in the same direction as seed, *in axis of a large fleshy alb.*

- * Fl's with bracts, or a membranous spathe at base.
  - † Perianth of 6 spreading leaves.
    - ‡ Fl's in umbels.
      - Fl's yellow. Stigma gaping. . . . . 4. GAGEA.
      - Fl's not yellow. Stigma simple. . . . . 5. ALLIUM.
    - ‡ Fl's in racemes, corymbs, or panicles.
      - Stam. nearly free. . . . . 6. ORNITHOGALUM.
      - Stam. attached to lower half of perianth. . . 7. SCILLA.
  - † Perianth of 6 cohering or erect leaves,
    - tubular, 6-fid, the points inflexed. . . . 8. AGRAPHIS.
    - Perianth globose, 6-toothed, narrowed at the mouth. . 9. MUSCARI.
- * Fl's without bracts, or a membranous spathe.
  - † Stem shrubby. Fl's solitary, in the centre of the persistent leaves. . . . . } 13. RUSCUS.
  - † Stem herbaceous.
    - Fl's solitary, or rarely in pairs.
      - Style 0; stigma sessile, 3-lobed. . . . 1. TULIPA.
      - Style 3-fid at apex. . . . . 2. FRITILLARIA.
      - Style filiform; stigma trigonous. . . . 3. LLOYDIA.
    - ‡ Fl's clustered.
      - § Perianth 4-parted. . . . . 10. MAIANTHEMUM.
      - § Perianth 6-parted.
        - Leaves from linear to ovate. Stigma entire. 11. CONVALLARIA.
        - Leaves setaceous. Stigmas 3. . . 12. ASPARAGUS.

Tr. I. *TULIPIDÆ. Bulbiferous. Fl's without a spathe. Fruit capsular. Anth. versatile, or loosely attached.*

1. TU'LIPA. *L.* Tulip.

Perianth campanulate of 6 pieces, without nectaries. Stigma sessile, 3-lobed. Caps. trigonous. Seeds flat.

1. T. *sylvéstris.* *P.* 4. (Y.) E. S.-7. Fl. at first drooping; segments of perianth ovate-acuminate; stamens hairy at base; stigma abrupt.

2. FRITILLA'RIA. *L.* Fritillary.

Perianth campanulate, of 6 pieces, each with a nectariferous cavity at base. Stigmas 3. Caps. trigonous. Seeds flat.

1. F. *Meleágris.* *P.* 5. (—P.) E.-4. Stem 1-fl'd, leafy; leaves alternate, linear lanceolate; nectary linear; points of perianth inflexed.—Meadows.

3. LLO'YDIA. *Salisb.* Spider-wort.

Perianth of 6 spreading leaves, with a transverse, nectariferous fold at base of each. Anth. attached by their base. Style filiform; stigma trigonous. Seeds convex above, flat below.

L. *serotína.* *P.* 6. (W. ‖ R.) E.-1. Leaves semicylindrical, dilated and sheathing at base. Fl. mostly solitary.—Welsh mountains.

4. GA'GEA. *Salisb.*

Perianth of 6 pieces, connivent below, spreading above. Stam. adhering to its base; fil. not dilated at base; anth. erect, attached by their base. Stigma gaping. Caps. trigonous.

1. G. *lútea.* *P.* 3, 4. (Y.) E. S.-7. Radical leaves 1-2, linear-lanceolate, longer than the angular scape; bracts 2, longer than umbel.—Woods.

Tr. II. *SCILLIDÆ. Bulbiferous. Fl's issuing from a membranous spathe. Anth. incumbent. Fruit capsular.*

5. ALLIUM. *L.* Onion.

Perianth of 6 ovate, spreading pieces. Stam. inserted at base of perianth. Caps. triquetrous.

* Leaves flat, not hollow.

† Stam. all alike, simple.

1. A. *carinátum.* *P.* 8. (+W.) 1. Stems rounded, leafy below; umbel bearing bulbs; leaves linear, keeled; bracts unequal, longer than umbel.—Sandy places.
2. A. *ursínum.* *P.* 5, 6. (W.) 20. Stem triangular, leafless; umbel level-topped, without bulbs; leaves ovate-lanceolate, stalked; bracts equal.—Woods.

† Each alternate stam. 3-pointed, the middle point bearing the anth. Stem leafy below. Umbels spherical,

3. A. *Ampelóprasum.* *P.* 8. (p. W.) E. ? I.-1. without (or with) bulbs; leaves linear, acuminate, keeled, the sheaths not cylindrical; bulbs of root clustered.—Steep Holms Isle. Gt. Arran Isle.
4. A. *Hólleri.* *P.* 8. (—P.) E. ? I.-2. Umbels bulbiferous; leaves linear, with cylindrical sheaths; bulb of root simple; stam. exserted; fil. dilated.—Roundstone. Arran Isle.
5. A. *Scorodóprasum.* *P* 6, 7. (—P.) ? Umbels bulbiferous; leaves linear, with keeled sheaths; bulb of root simple; stam. included.—Sandy places.

* Leaves roundish, tubular, or rarely solid and fleshy,

† 3 alternate stam. 3-pointed, the middle point antheriferous. Stem leafy below.

6. A. *vineále.* *P.* 7. (—R.) 16. — Umbel with numerous bulbs; spathe of 1 (or 2) bracts; stam. protruded; bulbs numerous.—Waste ground.

β. *compáctum.* — umbels without fl's, bearing bulbs only.

7. A. *sphærocéphalum.* *P.* 7. (R. *v.* P.) C. — Umbel without bulbs; spathe of 2 bracts; stam. twice as long as perianth; bulb with stalked offsets.—Sands.

† All the stam. simple.

8. A. *oleráceum.* *P.* 7, 8. (—G.) E. S.-6. — Umbel bulbiferous; leaves grooved above, ribbed beneath; one of the bracts with a long point.—Fields.

9. A. *Scœnóprasum.* *P.* 6, 7. (—P.) E. S.-2. — Umbel not bulbiferous; leaves terate, or slightly flattened above, subulate; bracts ovate, equal, short.—Fields.

β. *arcuátum.* — leaves arching, with crenulated striæ.

6. ORNITHO'GALUM. *L.* Star-of-Bethlehem.

Perianth of 6 persistent pieces. Stam. alternately larger, or dilated at base. Caps. with 3 angles, and 3 furrows.

1. O. *nútans.* *P.* 4, 5. (W.) E.-3. — Fl. pendulous, in a unilateral raceme; fil. broad, trifid, alternately longer, and with deeper lobes.—Orchards.

2. G. *Pyrenáicum.* *P.* 5. (—g. W.) E.-4. — Fl. at length erect, in an elongated raceme; fil. all dilated, with an elongated point; leaves fugaceous.—Woods.

3. O. *umbellátum.* *P.* 5. (W.) E. S.-7. — Fl. corymbose; ped. longer than bracts; fil. subulate, simple; leaves linear, acuminate.—Meadows.

7. SCI'LLA. *L.* Squill.

Perianth of 6 spreading, deciduous leaves. Fil. filiform, glabrous, inserted at its base.

1. S. *vérna.* *P.* 4. (+B.) 4. — Bracts lanceolate, as long as ped.; raceme few-fl'd, corymbose; leaves linear, channelled.—Coasts.

2. S. *autumnális.* *P.* 9. (—r. P.) E.-1. — Bracts 0; raceme hardly corymbose; leaves linear.—Dry pastures.

8. A'GRAPHIS. *Link.* Blue-bell.

Perianth tubular, campanulate, of 6 connivent leaves, combined below. Fil. attached nearly by the whole length to the perianth (decurrent), alternately shorter.

1. A. *nútans.* *P.* 5. (B. *v.* W.) 20. — Fl's nodding, in a raceme; bracts in pairs; leaves long, linear, channelled, acuminate.—Woods.

9. MUSCA'RI. *Tourn.* Grape-Hyacinth.

Perianth ovate, inflated, 6-toothed. Fil. inserted on the perianth, not decurrent. Cells 2-seeded.

1. M. *racemósum.* *P.* 5. (B.) E.-1. — Fl's ovate, crowded, nodding; upper ones sessile; leaves linear, flaccid, keeled, longer than scape.—Fields near Pakenham, Suffolk.

Tr. III. *ASPARAGINIDÆ. Seldom bulbiferous. Spathe* 0. *Fruit succulent.*

10. MAIAN'THEMUM. *Wigg.*

Perianth 4-parted: segments spreading horizontally, or reflexed. Stam. 4. Style 1: stigma obtuse, trigonous. Berry 2-celled. Seeds single in the cells.

1. M. *bifólium.** *P.* 5. (W.) E.-1. Stem with 2 alternate, triangular-cordate leaves; racemes terminal, spikate; root filiform.—Woods, Howick, &c.

11. CONVALLA'RIA. *L.* Solomon's-seal.

Perianth tubular or campanulate, 6-parted, or 6-toothed. Ov. 3-celled, ovules 2 in each stigma, obtuse, trigonous. Berry with 3, 1-seeded cells.

* Fl's campanulate, the segments recurved.

1. C. *majális.* *P.* 5. (W.) 15. E.-1. Scape ½-cylindrical, leafless; fl's racemose, nodding; leaves radical, ovate-lanceolate.—Woods.

* Fl's cylindrical-tubular, the segments not recurved.

2. C. *multiflóra.* *P.* 5, 6. (W.) E. S.-9. Leaves elliptic-ovate, alternately clasping; stem round; ped. axillary, 1 or many-fl'd; fil. hairy.—Woods.

3. C. *Polygónatum.* *P.* 5, 6. (g. W.) E.-3. Leaves as last; stem angular; ped. 1-2-fl'd; fil. glabrous.—Woods.

4. C. *verticellata.* *P.* 6. (y. W.) S.-2. Leaves whorled, linear-lanceolate; stem erect, angular; fl's solitary.—Woods, Den of Rechip, near Dunkeld, Blair, Athol.

12. ASPA'RAGUS. *L.*

Perianth 6-parted, deciduous. Stam. 6. Stigmas 3, reflexed. Ovary 3-celled; ovules 2 in each cell. Berry globose.

1. A. *officinális.* *P.* 8. (g. W.) E.-3. Stem mostly erect, rounded, much branched; leaves setaceous, fasciculate; stip. mostly single; ped. jointed.—Coasts.

13. RU'SCUS. *L.* Butcher's-broom.

Fl's imperfectly monœcious. Perianth 6-leaved. Fil. combined at base. Anth. 3 fertile ones. Style 1. Stigma capitate. Berry of 3, 2-seeded cells.

1. R. *aculéatus.* *Sh.* 3, 4. (y. W.) E. S.-8. Stem rigid, branched; leaves ("flattened shoots") ovate, evergreen, rigid, and pungent, bearing 1 fl. on the middle of their upper surface.—Thickets.

β. *láxus.* ?

ORDER XC.—MELANTHEÆ.

Mostly bulbiferous or tuberiferous plants, possessing highly poisonous, acrid, and narcotic properties. Fl. rarely polygamous. *Perianth petaloid, 6-leaved,* the claws often combined, the pieces generally involute in æstivation. Stam. 6, on the perianth. *Anth. turned outwards.* Ov. 3-celled, many-seeded; *styles distinct, or partially*

united. Caps. separable into 3 pieces, sometimes dehiscing loculicidally. Seeds with a membranous testa; *embr.* very minute, in a *large, dense, fleshy alb.*

1. CO'LCHICUM. *L.* Meadow-saffron.

Perianth funnel-shaped, with a long tube; limb 6-parted, issuing from a spathe. Carpels 3, combined.

1. C. *autumnále.* *P.* 2, 10. (—P.) 10. Leaves flat, broadly lanceolate, erect; ov. subterraneous, at the base of the bulb.—Meadows.

2. TOFIE'LDIA. *Huds.* Scottish-Asphodel.

Perianth 6-parted, the common ped. issuing from a 3-partite invol. Carpels 3-6, united in the lower half, forming a 1-celled ovary.

1. T. *palústris.* *P.* 7. (y. W.) 3. Fl. in an ovate spike; stem glabrous, filiform, nearly leafless; pet. obovate, obtuse; leaves linear, sword-shaped. Mountain bogs.

ORDER XCI.—JUNCEÆ.

Herbs terate, with fistular, or sometimes flat and channelled leaves, without any remarkable properties. *Cal. and Cor. 6-parted, more or less glumaceous,* or cartilaginous, sometimes petaloid; stam. 6; anth. 2-celled, turned inwards. Ov. 1 or 3-celled, 1 or many-seeded, or 1-celled and 3-seeded; ovules anatropal; style 1; stig. 3 or 1. Fruit capsular, with 3 valves, bearing the dissepiment in their middle, 1-seeded by abortion. *Embr.* very *minute, undivided,* cylindrical, *in the base, of a hard, fleshy, or cartilaginous alb.*

Fl's petaloid.		1. NARTHECIUM.
Fl's glumaceous.		
Caps. 1-celled.	Leaves flat.	2. LUZULA.
Caps. 3-celled.	Leaves rigid, terate, or channelled.	3. JUNCUS.

1. NARTHE'CIUM. *Huds.* Bog-Asphodel.

Fl's of 6, linear-lanceolate, petaloid, spreading pieces. Stam. woolly. Ov. pyramidal. Caps. 3-celled, 3-valved. Seeds with a long filiform appendage at each end.

1. N. *ossífragum.* *P.* 6, 7. (Y.) 17. Leaves linear, sword-shaped, uniform; pedicels with 1 bract at base, and another above the middle; perianth longer than stam.—Turfy bogs.

2. LU'ZULA. *De C.* Woodrush.

Fl's cartilaginous. Caps. 1-celled, 3-valved, valves without dissepiments. Seeds 3, at bottom of the cell.

* Infl. a dense, solitary, compound, drooping spike.

1. L. *spicáta.* *P.* 7. (+Br.) E. S.-1 Leaves somewhat channelled; spikelets shorter than their membranous, mucronated bracts; sep. and pet. acuminate, bristle-pointed, about as long as the rounded caps. —North of England and Scotland.

* Ind. corymbose, cymose or panicled, with lengthened ped.

† Ped. 1-fl'd. in a loose corymb: leaves hairy.

2. L. *pilosa.* — lanceolate: ped. reflexed: sep. and pet. acuminate, rather shorter than the obtuse caps.—Woods.
P. 4. 5. —Br. 19.

3. L. *Forsteri.* — Leaves linear: ped. erect: sep. and pet. narrow, acuminate, a little longer than the acute caps.—Thickets.
P. 5. 6. Br. E. S.-3.

† Ped. 3 or more-fl'd. in a sub-cymose, or sub-umbellate panicle.

4. L. *sylvatica.* — Ped. elongated, bearing about 3-fl's: panicle sub-cymose, doubly compound: sep. and pet. bristle-pointed, as long as caps: leaves linear-lanceolate.—Shady places.
P. 4-6. Br. 19.

5. L. *campestris.* — Fl's in 3 or 4 ovate, dense, sessile, pedunculated spikes, forming a panicle; sep. and pet. lanceolate, acuminate, longer than the obtuse caps.; leaves linear, hairy.—Woods and dry pastures.
P. 4. 5. Br. 20.

5. *congesta.* — spikes sessile and collected into an almost orbicular head.

6. L. *arcuata.* — Panicle sub-umbellate, of few 3-5-fl'd, drooping heads, on long ped.: sep. and pet. broadly lanceolate, longer than the ovate-globose caps.: leaves channelled.—Cairngorm and Sutherland Mountains.
P. 7. (Br.) E. S.-1.

3. JUNCUS. *L.* Rush.

Sep. and pet. 3, membranous, persistent. Stam. 6: when 3, opposite the sep. Caps. 3-celled, 3-valved; valves with the seed-bearing dissepiments in the middle.

* Plant with barren stems or leaves which resemble them.

† Panicle lateral: the superior portion of the scape continuous with the inferior, surrounded at the base with membranous sheaths (abortive leaves).

‡ Scape filiform, drooping, naked, faintly striated.

1. J. *filiformis.* — Panicle simple, of about 7 fl's, placed near the middle of scape; sep. and pet. lanceolate, acuminate, larger than the roundish caps.—Margins of lakes.
P. 7. (—G.) E. S.-1.

‡ Scape thickish, erect,

§ soft, faintly striated and naked.

2. J. *conglomeratus.* — Panicles much branched, densely conglomerate; sep. and pet. lanceolate, acute, nearly equal, about as long as the broadly ovate, very obtuse, apiculate caps.; stam. 3.—Marshes.
P. 7. (g. P.) 20.

β. *effusus.* — panicle more diffuse.

3. J. *effusus.* — Panicle very much branched, diffuse; sep. and pet. subulate-lanceolate, acuminate, nearly equal, rather longer than the obovate, obtuse, not apiculate caps; stam. 3-6.—Marshes.
P. 7. (—Br.) 20.

§ Scape rigid, naked,

4. J. *glaucus.* — glaucous deeply striated; pith interrupted; panicle much branched, erect; sep. and pet. lanceolate-subulate, rather longer than the elliptic-mucronate caps.—Wet places.
P. 7. (—Br.) 18.

5. J. *diffusus.* — Scape finely striated; pith continuous; root not creeping; panicle loose, much-branched, erect; sep. and pet.
P. 7, 8. (—Br.) S.-?

lanceolate-subulate, longer than the obovate, mucronate caps.—Wet places.

6. J. *Bálticus.* Root creeping widely; panicle erect, slightly branched;
P. 7. (Br.) E. S.-1. sep. and pet. ovate-lanceolate, as long as the terate-elliptical, mucronate caps.—Sea-coast.

† Panicle terminal, the outer bract dilated at the base; scape with barren stems (or leaves) sheathing round its base.

7. J. *maritimus.* Panicle very compound, lax, proliferous; clusters 4-8-fl'd;
P. 7, 8. (Br.) 7. sep. and pet. acute, as long as the elliptic, mucronate caps.—Salt marshes.

8. J. *acútus.* Panicle very compound, mostly compact; clusters 2-4-fl'd;
P. 7, 8. (Br.) E. I.-1. pet. obtuse, with a broad, membranous border, half the length of the roundish, ovate, acuminate caps.—Sea-shores.

* Plants destitute of barren stems.

† Pedicels bearing the fl's in clusters or heads.

‡ Scape bearing a terminal, compact cluster of 1, 2, or 3 heads, with 1-4 fl's in each.

§ Bracts more than double the length of the infl., long, setaceous;

9. J. *trífidus.* scape with 1 leaf on its upper part; heads 1-3 in a
P. 7, 8. (Br.) S.-1. cluster; sheaths fringed; sep. and pet. acute, shorter than the rounded, elliptical caps; root creeping.—Mountains.

§ Bracts not double the length of heads, or shorter.

‖ Stam. 6.

¶ Scape not bearing leaves, but having sheathing ones surrounding its base; roots not creeping.

10. J. *triglúmis.* Bracts shorter than fl's; heads 2-fl'd; leaves channelled;
P. 7, 8. (Br.) E. S.-2. caps. elliptical, acute, longer than the bluntish sep. and pet.; leaf-sheaths auricled.—Mountain bogs.

β. *bracteátus.* outer bract longer than heads.

11. J. *biglúmis.* Bracts longer than fl's; heads 2-fl'd; leaves not channelled;
P. 8. (Br.) S.-1. caps. turbinate, retuse, longer than the obtuse sep. and pet.—Mountain bogs.

¶ Scape bearing 1-3 leaves about its middle.

12. J. *castáneus.* Leaves grooved above; heads 1, 2, or 3, shorter than the
P. 7, 8. (Br.) E. S.-1. bract; caps. ovate, trigonal, nearly twice as long as the elliptic-lanceolate sep. and pet.—Mountain bogs.

‖ Stam. 3.

13. J. *capitátus.* Stem naked; leaves filiform; heads of fl's sessile, shorter
A. 6, 7. (Br.) C. than the setaceous bracts; sep. and pet. ovate-lanceolate, acuminate-aristate, twice as long as the truncate, apiculate caps.—Sandy ground.

‡ Scape bearing the numerous heads in much branched panicles.

§ Panicle (often very) compound.

‖ Sep. and pet. obtuse.

14. J. *obtusiflórus.* Scape 2-leaved, and with the internally divided leaves erect,
P. 7-9. (Br.) 10. rounded; panicle very compound, spreading and divaricated; sep. and pet. equal, as long as the ovate, acute, trigonous caps.—Marshes.

‖ Sep. acute,

15. J. *lampocárpus.* P. 7, 8. (Br.) 20. shorter than the ovate, attenuate, mucronate, triquetrous caps.; stem 3-6-leaved, and, as well as the internally divided leaves, compressed; panicle very compound, spreading.—Boggy places.

β. *nigritéllus.* panicle slightly compound; sep. and pet. shorter than the caps.

16. J. *acutiflórus.* P. 6-8. (Br.) 18. Sep. and pet. acuminate-aristate, the pet. longest, nearly as long as the narrow ovate, sub-acuminate caps.; stem 3 or 4-leaved, and as well as the internally divided leaves, slightly compressed; panicle compound, pyramidal.—Bogs.

§ Panicle nearly simple, elongated, with a few distant clusters; stem filiform; leaves setaceous; sep. and pet. equal,

17. J. *supínus.* P. 6-8. (Br.) 20. acute, nearly as long as the elliptical caps.; stam. 3; anth. as long as fil.; fl's frequently viviparous.—Bogs.

β. *subverticillátus.* stems spreading or procumbent.

γ. *bulbósus.* stems erect, with a swollen, bulbous base.

δ. *Babingtónii.* stam. 6; fil. twice as long as anth.

† Pedicels terminated by single fl's, in much branched panicles.

‡ Scape not bearing leaves.

18. J. *ténuis.* P. 7. (Br.) S.-1. Stem above shortly dichotomous, panicled; leaves linear-setaceous, grooved; fl's solitary, proximate, sessile; sep. and pet. very acuminate, longer than the spherical caps.—Clova mountains.

19. J. *squarrósus.* P. 7. (Br.) 19. Stem simple; leaves linear, grooved; panicle compound, with cymose branches; sep. and pet. ovate-lanceolate, as long as the elliptical-ovate, obtuse, mucronate caps.—Moors.

‡ Scape bearing 1 or more leaves about its middle or upper part.

20. J. *compréssus.* P. 6-8. (Br.) 18. Sep. and pet. obtuse, oval-oblong, shorter than the roundish, mucronate caps.; stem 1-leaved, compressed; leaves linear, setaceous, grooved; panicle very compound, shorter than bract.—Wet places.

β. *cœnósus.* panicle nearly simple, longer than bract; sep. and pet. equal to caps.

21. J. *bufónius.* A. 7, 8. (—Br.) 20. Sep. and pet. lanceolate, acuminate, unequal, longer than the oblong-obtuse caps.; stem usually bearing only 1 leaf above, dichotomous; leaves setaceous, grooved; fl's unilateral, scattered, mostly single.—Marshes.

β. *fasciculátus.* fl's 2 or 3 in each cluster.

ORDER XCII.—GRAMINEÆ.

Herbs rarely nocuous. Stem cylindrical, mostly fistular, but closed at the joints. Leaves narrow, simple, with a split sheath, having a membranous expansion at its junction with the blade,—the ligule. Fl's in little spikes, arranged in a spicate or panicled manner, of 1 or more florets. *Spikelets composed of imbricated, scaly bracts,* the outer pair of which are called glumes, those within them 1, 2, or more, immediately

enclosing the stam., palæ. Stam. 2 *or* 3, *or* in foreign plants more numerous. *Ov.* 1-*celled*; *styles* 2 *or* 3; stigmas feathery, *or* hairy; *ovule ascending*. Pericarp undistinguishable from the seed. *Embr. lying on one side, of a farinaceous alb., at the base naked.*

- * Ind. dense, spike-like, continuous, or nearly so, never 1 or 2-sided, the palea without 2 scales at base.
  - † Rachis with a number of long bristles beneath each spikelet. 2 SETARIA.
  - † Rachis without long bristles at the base of the spikelets.
    - ‡ [1] Palea without awns, or these very minute
      - § Spikelets, 1-fl'd.
        - Palea with a tuft of hairs at base. Stems solid. 12. ANTHOPHILA.
        - Palea naked at base. Stem hollow. . . 10. PHLEUM.
      - § Spikelets 2-fl'd. . . . 21. HELEERIA.
    - ‡ [2] One palea only awned. Stam. 3.
      - § Palea with 2 terminal bristles, and the long awn between. . . . 18. LAGURUS.
      - § Palea without terminal bristles.
        - Glumes united and swollen at base. Stigmas sessile. . . . 17. GASTRIDIUM.
        - Glumes free, not swollen at base. Styles filiform. 9. ALOPECURUS.
    - ‡ [3] Both palea awned. Stam. 2. . . . 22. ANTHOXANTHUM.
- * Ind. lax; if spike-like it is 1 or 2-sided; if terate and dense (as in *Phalaris Canariensis*), the palea have 2 scales at base.
  - † Scape single, or with 2-5 straight branches, upon either of which the 1-fl'd spikelets are sessile, or nearly so, and in 1 or 2 rows.
    - ‡ Scape single.
      - § Spikes 1-sided.
        - Glumes 6. . . . . 7. NARDUS.
        - Glumes 2. . . . . 6. KNAPPIA.
      - § Spikes 2-sided
        - Spikelets in threes on each tooth of rachis, furnished with long, terminal setæ. . 40. HORDEUM.
        - Spikelets single on each tooth of rachis. Setæ 6. 4. ROTTBŒLLIA.
    - ‡ Scape branched.
      - § [1] Branches long, closely appressed, so as to be almost parallel. . . . 5. SPARTINA.
      - § [2] Branches divergent from almost the same point.
        - Ligules prominent, membranous. . 3. DIGITARIA.
        - Ligules abortive, of a few, straggling hairs. . 4. CYNODON.
      - § [3] Branches alternate, densely crowded, with the spikelets containing 1 perfect, and 1 barren flor. 1. ECHINOCHLOA.
  - † Scape branched, rarely simple, the spikelets imbricated on all sides; if in 1 or 2 rows, and nearly so, the spikelets are more than 1-fl'd.
    - ‡ [1] Spikelets 1-fl'd.
      - § Palea with 2 scales, or feathered bristles at the base. Ind. sometimes dense, oval. . 12. PHALARIS.
      - § Palea naked, or with a tuft of hairs at base.
        - ¦ Both glumes and 1 palea awned. . . 11. POLYPOGON.
        - ¦ Glumes not awned, acute.
          - ¶ Panicle branches long, drooping . 19. MILIUM.
          - ¶ Panicle branches ascending, or divergent.
            - Palea with long, straight hairs from the base. . . . 14. CALAMAGROSTIS.
            - Palea without hairs,
              - shorter than the glumes. . 13. AGROSTIS.
              - Palea as long as the glumes. . 16. ANEMAGROSTIS.
    - ‡ [2] Spikelets 2-fl'd; sometimes only the rudiment of a second one. The palea are never webbed at the base, nor hairy on the mid-rib below.
      - § Glumes as long as, or longer than the flor.
        - ¦ Outer palea awned from the base or centre.
          - Palea with a tuft of hairs at the base; or if naked, the ind. is a compound panicle. 34. AIRA.

Paleæ naked at base; or if not the infl. is racemose. . . . } 31. AVENA.
‖ Outer palea of lower flor. awnless, occasionally with a terminal seta.
¶ Upper sheath longer than its leaf.
Upper flor. awned. . . 33. HOLCUS.
Awns 0.] . . . 30. KŒLERIA.
¶ Upper sheath shorter than its leaf. . 27. MELICA.
§ Glumes shorter than flor.
‖ Paleæ awned from near the base. . . 32. ARRHENATHERUM.
‖ Paleæ not awned.
Leaves hairy above. . . . 29. MOLINIA.
Leaves not hairy. . . . 28. CATABROSA.
‡ 2 Spikelets of 3 or more flor., rarely 2, but the flor. are then webbed at the base, or the outer palea is hairy on the mid-rib.
§ Infl. dense, spike-like, 1-sided or terate.
‖ Spikelets solitary on 1 side of the rachis, each with a pectinated scale at base. . } 38. CYNOSURUS.
‖ Spikelets on 2 opposite sides of the rachis.
¶ Spikelets in pairs on each tooth, apparently forming whorls. . . } 41. ELYMUS.
¶ Spikelets single on each tooth of rachis.
Glumes 2, opposite. . . 39. TRITICUM.
Glumes single. . . . 42. LOLIUM.
§ Infl. loosely panicled or racemed.
‖ Glumes nearly as long as or longer than flor.; the paleæ not webbed at base, nor hairy on the mid-rib below.
Infl. a raceme of few erect spikelets. . 25. TRIODIA.
Infl. a compound panicle of many spikelets. 24 HIEROCHLOE.
‖ Glumes much shorter than spikelets; if as long, the paleæ are either webbed at the base, or the outer one is hairy on the mid-rib below.
¶ Outer palea with a long awn, the ligule mostly prominent. . . } 36. BROMUS.
¶ Outer palea with a short awn or 0, rarely with a long one, but with a very short 2-lobed ligule.
** Flor. in tufts at the end of the panicle branches. . . } 37. DACTYLIS.
** Flor. not tufted equally, diffuse.
†† Flor. with very long, straight hairs at base. . . } 20. ARUNDO.
†† Flor. naked at base.
‡‡ Spikelets broadly ovate, pendulous. . . } 26. BRIZA.
‡‡ Spikelets oblong or lanceolate.
Paleæ often bristle-pointed or awned, or membranous at the summit, with setaceous leaves. . } 35. FESTUCA.
Paleæ never bristle-pointed or awned; leaves not not setaceous. . } 23. POA.

Tr. I. *PANICIDÆ. Infl. close. Spikelets dorsally compressed, with an invol. of long bristles at base, of* 1 *perfect flor., and occasionally an abortive one. The lowermost glume very small. Ligules very short, or wanting.*

1. ECHINOCHLO'A. *Beauv.* Panick-grass.

Bristles of invol. smooth. Outer glume hairy. Outer palæa bristle-pointed.

1. E. *Crus-galli.** Rachis bearing opposite or alternate spikes, the spikelets
A. 7. E.-1. crowded; fl's unilateral; ligules 0.—Moist soil.

2. SETA'RIA. *Beauv.* Bristle-grass.

Bristles of invol. rough. Glumes not hairy. Neutral flor. of 1 palea, not bristle-pointed.

1. S. *viridis.** Bristles of the invol. having ascending teeth about 3 times
P. 7, 8. E.-2. the length of the spikelet.—Fields. London; Norwich.
2. S. *verticillata.** Teeth of involucral bristles reflexed; bristles a little longer
A. 7, 8. 1. than the spikelet.—Fields, London. Norwich.

TR. II. *SPARTINIDÆ. Spikelets arranged on 1 or 2 sides of the rachis, either stalked or sessile, each spikelet of 1, rarely 2 awnless flor. Glumes 2, rarely 0.*

3. DIGITA'RIA. *Scop.* Finger-grass.

Spikes 3-5 from the same point; spikelets in pairs, on one side of rachis, shortly stalked. Ligule prominent, entire. Styles long, distinct; stigmas long. Anth. cloven at each end.

1. D. *humifusa.** Leaves and sheaths glabrous: flor. ovate, pubescent, the
A. 7. 8. E.-1. ribs of paleæ glabrous.—Sandy-fields.

4. CY'NODON. *Rich.* Dog's-tooth-grass.

Spikes 3 or 5, from the same point; spikelets 1-fl'd, single, on 1 side of rachis. Glumes nearly equal, shorter than paleæ, both awnless. Style distinct, prominent.

1. C. *dactylon.* Spikes 3-5, digitate; paleæ glabrous, with a bristle be-
A. 7. 8. E.-1. neath the outer one; leaves downy beneath; scions creeping.—Shores. Devon; Cornwall; Dorset.

5. SPARTI'NA. *Willd.* Cord-grass.

Spikes 2 or more; spikelets sessile, unilateral, of 1 flor. Glumes very unequal, compressed, acuminate. Styles long, partly united. Anth. cloven below. Ligule very short.

1. S. *stricta.* Spikes 2 or 3, longer than the leaves; outer glume hairy,
P. 8. E.-2. more than half the length of the inner.—Salt marshes.
2. S. *alterniflora.* Spikes numerous, shorter than leaves: outer glume not
P. 8. E.-1. half the length of inner.—River Itchen, Southampton.

6. KNA'PPIA. *Sm.*

Spike single, 1-sided; spikelets of 1 awnless flor. Glumes equal. Paleæ scarious, very hairy. Ligule prominent. Styles very short; stigmas long, slender.

K. *agrostidea.* Paleæ hairy, shorter than glumes; stem numerous; leaves
A. 3-5. E.-1. short, rough.—Sandy places, near sea.

7. NA'RDUS. *L.* Mat-grass.

Spikelets sessile on 1 side of the rachis. Glumes 0. Paleæ 2.

N. *stricta.* Spike close, single, erect; lower leaves more than twice the
P. 7. 19. length of the sheaths.—Heaths.

8. ROTTBŌ'LLIA. *L.* Hard Sea-grass.

Spikelets embedded on each side of the rachis, rarely with 2 flor. Glumes 2.

1. R. *incurvāta.* Spike cylindrical, curved; glumes united at base.—Sea-
A. 7. 17. shores.
β. filiformis. spike filiform, somewhat compressed, erect.

Tr. III. *ALOPECURIDÆ. Infl. dense, close, interrupted, or rather spreading. Spikelets of 1 flor. Glumes equal, or very nearly so, frequently awned. Base of flor. naked, or with 2 scales or bristles at base. Stigmas long.*

9. ALOPECU'RUS. *L.* Foxtail-grass.

Glumes without awns, mostly connate at base. Palea single, with an awn rising from below its centre.

* Upper leaf much shorter than its sheath. Stem erect, smooth.

1. A. *alpinus.* Panicle spiked, oblong, 3 times as long as broad; glumes
P. 7. S.-1. acute, hairy; awn projecting not ½ its length beyond the palea.—High mountains.

2. A. *pratensis.* Panicle spiked, cylindrical, more than 4 times its breadth;
P. 5, 6. 20. glumes acute, ciliated, downy; awn projecting more than the length of the flor.—Pastures.

* Upper leaf equalling its sheath.

† Awn projecting far beyond the flor. Panicle spiked, cylindrical.

3. A. *geniculātus.* Stem smooth, bent at the joints, not bulbous; glumes acute,
P. 6, 7. 20. and diverging at summit, ciliated; palea obtuse; stem not bulbous.—Wet places.

4. A. *bulbōsus.* Stem smooth, erect, bulbous; glumes abruptly acute, not
P. 6. E.-2. diverging at summit, downy; palea truncate, with a bifid point.—Salt marshes.

5. A. *agrēstis.* Stem rough above, erect; panicle tapering, spiked, slender;
A. 7. E. S.-14. glumes and palea acute, nearly glabrous; awn projecting more than the length of the flor.—*Passim.*

† Awn only as long as flor., not projecting; stem ascending, bent at the
6. A. *fulvus.* joints, smooth; panicle spiked, cylindrical; glumes ciliated;
P. 6. E. S.-3. anth. orange-coloured.—Wet places.

10. PHLE'UM. *L.* Cat's-tail-grass.

Panicle spiked, compact. Glumes nearly equal. Paleæ 2, not awned, the outer one sometimes with a minute point. Stigmas long and slender.

* [1] Glumes wedge-shaped, rather abruptly pointed at summit, rough, naked on
1. P. *āsperum.* the keel; panicle cylindrical; paleæ toothed; stem often
A. 7. E.-2. branched; ligule acute.—Dry, open fields.

* * Glumes rounded below, truncate, with a bristly point at back.

2. P. *praténse.* *A.* 6. — Panicle cylindrical; glumes more than twice as long as the mucros, ciliated on the keels.—Fields. 20.

β. *nodósum.* — root rather tuberous.

3. P. *alpínum.* *P.* 7. S.-1. — Panicle ovate-oblong; glumes not twice the length of the mucros, ciliated on the keels.—High mountains.

* * Glumes acute at each end.

4. P. *Bœ'hmeri.* *P.* 7. E.-1. — Panicle spiked, cylindrical; glumes linear-lanceolate, obliquely truncate, mucronate, scabrous; outer palea nearly as long as glumes.—Dry fields.

5. P. *arenárium.* *A.* 5, 6. 9. — Panicle oblong, narrowed below; glumes ciliated on the back above; outer palea notched at the summit, much shorter than glumes.—On sand near the sea.

11. POLYPO'GON. *Desf.* Beard-grass.

Panicle compact, interrupted. Glumes equal, with long, slender awns. Paleæ ½ as long as the glumes, the outer obtuse, tipped with a seta.

1. P. *littorális.* *P.* 6, 7. E.-1. — Awns twice as long as the linear-lanceolate, rather acute glumes.—Salt marshes.

2. P. *Monspeliénsis.* *P.* 6, 7. E. S.-1. — Awns thrice as long as the linear, obtuse glumes.—Salt marshes.

12. PHA'LARIS. *L.* Canary-grass.

Infl. dense, or lax. Glumes erect, carinate. Paleæ smaller than the glumes, at length indurated, and covering the fruit, the outer one without lateral ribs.

1. P. *Canariénsis.** *A.* 7. E. S.-11. — Panicle dense, oval; glumes winged on the keel; paleæ with 2 lanceolate scales between them at the base.

2. P. *arundinácea.* *P.* 6, 7. 20. — Panicle compound. with patent branches; glumes not winged; paleæ with 2 feathery setæ alternate with them at the base.—Lakes and rivers.

β. *pícta.* — leaves variegated with green and white.

Tr. IV. *AGROSTIDÆ. Infl. panicled, close or spreading. Spikelets of* 1 *flor. Stams. equal, or nearly so. Paleæ more or less hairy at base, awned or tipped with a minute point, or very unequal.*

13. AMMO'PHILA. *Host.* Sea-reed.

Panicle spiked. Glumes nearly equal, keeled, not awned. Paleæ a little shorter than glumes, surrounded at the base with a tuft of hairs.

1. A. *arundinácea.* *P.* 7. 10. — Panicle acute above and below; glumes and paleæ linear-lanceolate, acute, with a tuft of hairs at their base ⅓ their length.—Sea-shore.

14. CALAMAGRO'STIS. *L.* Small-reed.

Panicle lax. Outer glumes rather smaller than inner. Paleæ very unequal, surrounded at the base by a small tuft of hairs. Outer one awned.

* Hairs longer than flor.

1. B. *Epigéjos.* P. 7. 12. Awn projecting beyond the flor.; ligule acute, bifid; glumes subulate, the keel rough.—Shady places.

2. A. *lanceoláta.* P. 7. E.-7. Awn not projecting; ligule obtuse, entire; glumes lanceolate, the keel smooth.—Wet places.

* Hairs shorter than flor.,

3. C. *Lappónica.* P. 6, 7. I.-1. Ligule oblong; glumes lanceolate, acuminate; paleæ nearly as long as the hairs and awn, which latter is inserted near the base.—Lough Neagh, Antrim.

4. C. *stricta.* P. 6. S.-1. Ligule abrupt; glumes broadly lanceolate, acute; paleæ much longer than hairs, with an awn equal to it in height, inserted above its middle.—Near Forfar.

15. AGROSTIS. *L.* Bent-grass.

Infl. panicled, spreading. Outer glume a little larger than inner. Paleæ much shorter than cal., very unequal, the inner sometimes wanting, sometimes with a minute tuft of hairs at base.

* Sheaths roughish from above downwards.

1. A. *setácea.* P. 6, 7. E.-1. Leaves setaceous; outer palea with a long, geniculated, twisted awn from its base, inner one very minute.—Dry places in the South-west.

2. A. *álba.* P. 7, 8. 20. Leaves linear-lanceolate; outer palea 5-ribbed, not awned; inner one smaller.—Pastures; roadsides.

β. *stolonífera.* branches of panicle tufted; root creeping, with long, procumbent scions.

γ. *palústris.* spikelets large; outer palea with a very minute awn.

* Sheaths and stem perfectly smooth.

3. A. *vulgáris.* P. 7. 20. Ligule short, truncate; branches of panicle diverging; outer glume toothed on the upper part of the keel; outer palea 3-ribbed.—Dry places.

β. *arístata.* outer palea slightly awned.

γ. *púmila.* not 3 inches high, cæspitose.

4. A. *canína.* A. 7, 8. 18. Ligule long, acute; panicle spreading when in fl., otherwise close; outer glume toothed on the whole length of the keel; palea not ribbed with a dorsal awn.—Heaths.

16. ANEMAGRO'STIS. *Trin.*

Infl. panicled, spreading; inner glume smaller than outer. Paleæ as long as the glumes; outer one with a long, dorsal awn.

1. A. *Spica-vénti.* A. 6, 7. E. S.-7. Awn arising from a little below the summit of the palea, and more than 3 times its length.—Sandy fields.

17. GASTRI'DIUM. *Beauv.* Nit-grass.

Panicle spiked. Glumes equal, ventricose at base. Paleæ equal, not ½ the length of the glumes, the outer one with a long awn.

1. G. *lendĭgerum.* A. 7. E.-2. Glumes lanceolate-acuminate; awn twice their length; ligule oblong.—Wet places near the sea.

Tr. V. *STIPAIDÆ. Spikelets of* 1 *flor. Paleæ strongly awned. Glumes long, hairy, taper-pointed*

18. LAGU'RUS. Hare's-tail-grass.

Panicle spiked. Glumes fringed, lengthened into feathery setæ. Outer palea ending in 2 long setæ, and a dorsal, twisted awn between.

L. *ovátus.* *A.* 6. — Spikes ovate, soft; leaves broadly lanceolate, downy.—C. Sandy places, Guernsey.

Tr. VI. *MILIIDÆ. Infl. compound-panicled, spreading. Spikelets dorsally compressed, of* 1 *flor. Glumes nearly equal. Paleæ not awned, naked at base.*

19. MI'LIUM. *L.* Millet-grass.

Glumes flattish, rather acute, 3-ribbed. Paleæ nearly as long as glumes, smooth, not awned, hardening on the fruit.

1. M. *effúsum.* *P.* 5. 18. — Panicle diffuse, smooth, its branches sub-verticellate, spreading; leaves lanceolate.—Shady places.

Tr. VII. *ARUNDINIDÆ. Infl. compound-panicled, spreading. Spikelets of* 3-5 *flor. Glumes very unequal. Paleæ acute, not awned, very hairy at base.*

20. ARU'NDO. *L.* Reed.

Panicle large and spreading. Inner palea half the length of the outer. Footstalk of secondary flor. with very long hairs.

1. A. *Phragmites.* *P.* 7. 20. — Glumes acuminate, coloured, ribbed, about 5-fl'd, shorter than paleæ; leaves lanceolate.—By water.

Tr. VIII. *SESLERIIDÆ. Infl. compact. Spikelets many-fl'd. Paleæ toothed at summit, acutely awned, naked at base. Styles very short; stigmas very long.*

21. SESLE'RIA. *L.* Moor-grass.

Glumes nearly equal, pointed, shorter than the paleæ.

1. S. *cærúlea.* *P.* 4, 5. 3. — Raceme oval; outer palea 4-toothed at summit, inner 2-toothed; leaves abrupt, with a minute, rough point.—Mountains.

Tr. IX. *ANTHOXANTHIDÆ. Infl. dense. Spikelets of* 1 *hairy flor. Both paleæ awned. Glumes very unequal. Style very short; stigma very long.*

22. ANTHOXA'NTHUM. Sweet Vernal-grass.

Panicle ovate-oblong. Glumes very unequal. Paleæ equal, much shorter than glumes. Ov. with 2 notched scales at base. Stam. 2.

1. A. *odorátum.* *P.* 5, 6. 20. — Glumes about as long as the awns; base of leaves hairy.—Meadows.

Tr. X. *POIDÆ. Infl. panicled or racemed. Spikelets of* 2 *to* 18 *flor. Paleæ mostly membranous at summit, occasionally pointed, but not awned.*

23. POA. *L.* Meadow-grass.

Glumes shorter than paleæ, mostly 3-ribbed. Paleæ generally webbed at base; outer one 3-7-ribbed; dorsal and marginal ribs mostly hairy.

* Paleæ with a web at their base.

† Upper leaf much shorter than the sheath,

1. P. *pratensis.* — with a short and rounded ligule; spikelets oblong-ovate.
P. 6, 7. 20. of 4 acute flor.; outer paleæ 5-ribbed; stem and upper sheath smooth; root creeping.—Meadows.

β. *angustifolia* — smaller; leaves long, slender, lower ones involute.

γ. *subcærulea.* — spikelets broader; leaves broad and short, glaucous.

2. P. *triviális.* — Ligule of upper sheath long and pointed; spikelets ovate.
P. 6, 7. 20. of 3 acute flor.; outer palea 5-ribbed; stem and sheaths roughish; root fibrous.—Shady places.

β. *parviflóra.* — spikelets 1 or 2-fl'd.

3. P. *bulbósa.* — Ligule prominent, acute; spikelets of 3 or 4 acute flor.;
P. 4, 5. E.-1. outer palea with 3 silky ribs; leaves with a white serrulated margin; stem somewhat bulbous.—Sands in the South and East.

† Upper leaf as long as, or longer than its sheath.

4. P. *nemorális.* — Panicle slightly drooping; ligule very minute, obtuse;
P. 6, 7. 15. spikelets acute, 3-4-fl'd; outer palea 5-ribbed, the dorsal and 2 lateral ones hairy; stem smooth, round.—Shady places.

β. *glaúca.* — glaucous; spikelets long-stalked, few-fl'd.

5. P. *Balfoúrii.* — Panicle erect, slender; ligule prominent, obtuse; spikelets
P. 7. S.-1. 3-fl'd, obtuse; outer palea 5-nerved, the dorsal and marginal ones hairy; stem compressed, slightly rough.—Mountains in Perth and Forfar.

6. P. *compréssa.* — Panicle slightly 1-sided, spreading in fl., at other times
P. 7. 16. close; ligule short, obtuse; spikelets ovate, or oblong-ovate; fl's 5-7, obtuse, slightly ribbed at base; outer palea with 3 hairy ribs; stem very much compressed.—Dry places.

* Paleæ not webbed at base,

† but with hairs, especially on the ribs at base.

‡ Outer palea 3-ribbed. Uppermost ligule acute.

7. P. *alpína.* — Spikelets erect, of 4-5-flor.; leaves broadly linear, obtuse,
P. 7, 8. 1. folded; uppermost joint exposed.—Lofty mountains.

8 P. *láxa.* — Spikelets slightly drooping, of 3-4-flor.; leaves narrowly
P. 7. S.-1. linear, acute, flat; uppermost joint concealed.—Ben Nevis.

β. *flexuósa.* — branches of panicle wavy; fl's mostly viviparous.

‡ Outer palea 5-ribbed.

§ Upper joint at or about the centre of stem.

9. P. *polynóda.* — Panicle ovate-oblong; second sheath not reaching to the
P. 6, 7. S.-1. first joint; fl's 4 or 5, acute.—Edinburgh.

10. P. *Parnéllii.* — Panicle close, oblong; second sheath not reaching to the
P. 7. S.-1. first joint; fl's 2 or 3, acute.—Teesdale.

11. P. *montána.* — Panicle long, slender; second sheath enclosing the first
P. 6. S.-1. joint; spikelets 2 or 3-fl'd.—Ben Lawers.

§ Upper joint below the centre of stem.

‖ Stem, rachis, and branches rough.

12. P. *cæ'sia.* *P.* 7. — E. S.-1. Panicle ovate; branches ascending in pairs, spikelets ovate; glumes acute; paleæ 5-ribbed, the dorsal and marginal ribs hairy.—Mountains.

13. P. *dístans.* *P.* 6-8. — 8. Panicle elongated; branches at length spreading or deflexed, the lower in 4's or 5's; spikelets linear; glumes obtuse; paleæ with all the ribs glabrous except at the base, the central one extending to the summit.—Sandy shores.

β. *Bórreri.* — panicle branches erecto-patent; rachis terate; outer palea apiculate.

‖ Stem and rachis smooth.

14. P. *marítima.* *P.* 6, 7. — 11. Panicle-branches at length erect; spikelets linear, adpressed, 4-8-fl'd; outer paleæ obtuse, apiculate; leaves flat; ligule obtuse, decurrent; with scions.—Sea-coast.

15. P. *ánnua.* *A.* 3-7. — 20. Panicle branches spreading; spikelets ovate-oblong, 5 or 6-fl'd; outer palea with 5 more or less silky ribs; leaves involute; ligule oblong, acute; scions 0.—*Passim.*

† Paleæ without hairs at the base.

‡ Upper sheath longer than its leaf; spikelets stalked on the rachis.

§ Spikelets linear.

16. P. *procúmbens.* *P.* 6-9. — 7. Panicle oblong-lanceolate; spikelets numerous, 5-fl'd; glumes with a dorsal, and 2 prominent, lateral ribs; outer palea 5-ribbed, the dorsal rib smooth.—Salt marshes.

17. P. *flúitans.* *P.* 6-9. — 20. Panicle with nearly simple, roughish, ascending branches; spikelets linear, adpressed, of 7-12 oval, oblong, obtuse flor.; outer palea thrice as long as broad.—Still water.

18. P. *plicáta.* *P.* 6-9. — E.-? Panicle with compound, nearly smooth branches, erect in fl., divaricate in fr.; spikelets linear, of 7-20 lanceolate-oblong, acute flor.; outer palea twice as long as broad.—Hampstead.

§ Spikelets, especially the upper, lanceolate or ovate. Branches of panicle rough.

19. P. *aquática.* *P.* 7. — 14. Panicle erect; spikelets of 4 to 8 flor.; glumes broad, obtuse; outer palea 7-ribbed, the dorsal one closely and minutely toothed.—Wet places.

20. P. *sylvática.* *P.* 6, 7. — 3. Panicle and branches slightly drooping; spikelets of 3 flor.; glumes narrow, acute; outer palea rough, membranous at summit, 3-ribbed, the dorsal rib serrated, distantly and minutely toothed.—Mountain woods.

β. *decídua.* — spikelets of 2 flor.; leaves narrower.

‡ Upper sheath shorter than its leaf; or the spikelets sessile, on the rachis.

21. P. *rígida.* *A.* 6. — 16. Panicle compound, 2-sided; summit of the upper glume on a level with the base of the third flor.—Dry places.

22. P. *loliácea.* *A.* 6, 7. — 6. Panicles with the spikelets sessile on each side of the rachis; summit of the upper glume on a level with the base of fourth flor.—Sandy-coast.

24. HIEROCHLO'E. *Gmel.* Holy-grass.

Panicle mostly lax. Spikelets laterally compressed, of 3 flor., enclosed within the nearly equal glumes. Outer palea 5-ribbed; anth. 2 in the perfect flor.

1. H. *boreális.* Panicle erect, the branches smooth, in pairs; awns 0; outer
P. 7. S.-1. palea ciliated at margin.—Mountain valley of Kella, Angushire.

25. TRIO'DIA. *Br.* Heath-grass.

Panicle racemed. Spikelets laterally compressed, of 2-4 flor., enclosed within the glumes. Outer palea with 3 teeth at end.

1. T. *decúmbens.* Panicle of few, oval spikelets; glumes as long as the flor.;
P. 7. 20. ligule reduced to a tuft of hairs.—Heaths.

26. BRI'ZA. *L.* Quaking-grass.

Panicle lax; spikelets suspended. Glumes equal, spreading, 3-ribbed. Flor. 5-8 in each spikelet. Outer palea broad, cordate, rounded on back; lateral ribs 0.

1. B. *média.* Spikelets broadly ovate, of about 5 flor.; glumes shorter
P. 6. 20. than the flor.; ligule truncate, very short.—Pastures.
2. B. *minor.* Spikelets triangular, of about 7 flor.; ligule elongated, lan-
P. 6. E.-1. ceolate.—Fields in the South.

27. ME'LICA. *L.* Melic-grass.

Panicle lax, or racemed. Spikelets of 1 or 2 perfect flor., enclosed by the glumes. Glumes nearly equal, 5-ribbed. Outer palea 7-ribbed, becoming hardened on the fruit.

1. M. *nútans.* Spikelets ovate, drooping, of about 2 flor., in a 1-sided ra-
P. 5, 6. 8. ceme.—Mountain woods.
2. M. *uniflóra.* Spikelets oblong, cylindrical, erect, of 1 perfect flor., in
P. 6. 18. a lax slightly drooping, panicle.—Shady woods.

28. CATABRO'SA. *Beauv.* Whorl-grass.

Spikelets of 1-3 flor., much longer than the obtuse, very unequal glumes, which have 2 faint, lateral ribs. Outer palea notched above, 3-ribbed. Ligule prominent.

1. C. *aquática.* Branches of panicle whorled, spreading; leaves broadly
P. 6, 7. 17. linear, obtuse.—In ditches, &c.
β. maritima. spikelets 1-fl'd.

29. MOLI'NIA. *Schrank.*

Spikelets of 1-4 flor., much longer than flor.; glumes without lateral ribs. Outer palea acute, entire at summit, 3, rarely 5-ribbed. Ligule very small.

1. M. *cærúlea.* Panicle erect, elongate, narrow; leaves much shorter than
P. 7, 8. 20. panicle, hairy above; flor. 2-4.—Damp heaths.
β. depauperáta. spikelets 1-fl'd, few; outer palea sometimes 5-ribbed.

30. KŒLE'RIA. *Link.*

Panicle rather close. Spikelets of 2 flor. enclosed within the unequal glumes. Outer palea 3-ribbed, keeled, acuminate, awnless.

1. K. *cristáta.* Panicle ovate, interrupted below; leaves narrow, rough at
P. 6, 7. 14. the edges, ciliated.—Dry pastures.

Tr. XI. *AVENIDÆ. Infl. racemed or panicled. Spikelets of 2-4 flor. Paleæ awned from the base or centre.*

31. AVE'NA. *L.* Oat or Oat-grass.

Panicle lax. Spikelets 2 or more fl'd. Paleæ lanceolate, firmly enclosing the fruit; outer one bearing a twisted, dorsal awn. Upper flor. often imperfect.

* Inner glume 7-11-ribbed.

1. A. *fátua.* *A.* 7. — Flor. shorter than glumes; spikelets of about 3 flor., pendulous; outer palea with yellowish hairs at base, bifid at the end.—Corn-fields. 14.

2. A. *strigósa.* *A.* 7. — Flor. not shorter than glumes; spikelets drooping, of about 2 flor.; outer palea glabrous, ending in 2 long, straight bristles.—Corn-fields. 6.

* Inner glume with 3 ribs.

† Radical leaves not hairy.

3. A. *praténsis.* *P.* 6. — Spikelets racemed, erect, of 3-6 flor., which are longer than the glumes; leaves finely serrated.—Dry pastures. 14.
   - β. *longifólia.* — radical leaves as long as the stem.
   - γ. *alpína.* — flor. 5 or 6; leaves suddenly acuminate; sheath keeled, smoothish; panicle often branched.

4. A. *planicúlmis.* *P.* 7. — Panicle compound; spikelets of 5-7 flor.; leaves scabrous, broadly linear, suddenly acute; sheaths flat, carinate, scabrous; lower part of stem compressed.—Isle of Arran. S.-1.

† Radical leaves hairy; spikelets of 3 flor.

5. A. *pubéscens.* *P.* 7. — Panicle nearly simple; outer palea often jagged at summit; ligule prominent, acute.—Calcareous soil. 16.

6. A. *flavéscens.* *P.* 7. — Panicle much branched; outer palea with 2 terminal bristles; ligule very short, obtuse.—Dry meadows. 15.

32. ARRHENATHE'RUM. *Beauv.*

Panicle lax. Spikelets of 2 flor, the lower one with stamens only, its lower palea with a long, twisted awn above the base; the upper flor. perfect, with a short, straight awn from below the apex.

A. *avenáceum.* *P.* 6, 7. — Panicle lax, simple; leaves harsh, roughish above and below, crowned with a short, obtuse, ragged ligule.—Pastures. 20.
   - β. *nodósum.* — stem nodose at the base.

33. HO'LCUS. *L.* Soft-grass.

Spikelets of 2 flor. Upper flor. stameniferous, having its large palea awned a little below the summit; lower seldom awned, hardened on fruit; glumes longer than flor.

1. H. *móllis.* *P.* 7. — Inner glume acute; awn exserted, geniculated, rough in its whole length; joints hairy; root creeping.—Pastures. 20.

2. H. *lanátus.* *P.* 6, 7. — Inner glume obtuse, mucronate; awn included, curved, smooth except near the tip; joint smooth; root fibrous.—Meadows, &c. 20.

34. AI'RA. L. Hair-grass.

Panicle lax. Spikelets of 2 or 3 flor.; lower one sessile. Glumes of equal length. Outer palea very indistinctly ribbed, awned.

* Awn protruding beyond the summit of the paleæ,

† clavate above, fringed about the centre, shorter than glumes; panicle spreading, infl. otherwise dense; branches rough; palea acute at end; leaves setaceous.—Sea-coast, Norfolk, Suffolk.

1. A. *canéscens.* *P.* 7. E.-1.

† Awn filiform.

‡ Sheath of upper leaf rough from above downwards; outer palea bifid, but not deeply, at summit.

2. A. *flexuósa.* *P.* 7. 19. Panicle diffuse in fl.; flor. villous at base, as long as the glumes; awn arising from a little above the base of paleæ.—Heaths.

‡ Sheath of upper leaf rough from above downwards; paleæ with an attenuate, deeply bifid point.

3. A. *caryophýllea.* *A.* 6. 20. Panicle branches much divaricating; glumes rounded at base; awn from below the middle of the palea.—Dry, gravelly places.

4. A. *præcox.* *A.* 4, 5. 20. Panicle somewhat spiked; glumes scarcely rounded below; the awn from about the middle of the palea.—Sandy hills and pastures.

* Awn not protruding beyond the summit of the paleæ.

5. A. *alpína.* *P.* 8. S. E.-2. Panicle rather close; branches scabrous; leaves mostly involute; palea acute, bifid at summit; awn from above its middle.—Mountains.

6. A. *cæspitósa.* *P.* 6-8. 19. Panicle diffuse; branches smooth; leaves flat; palea truncate, jagged at summit; awn from a little above its base.—Fields.

Tr. XII. *FESTUCIDÆ. Infl. panicled or racemed. Spikelets of* 2-14 *flor. Paleæ generally awned from the summit, or a little beneath it. When not awned, the glumes are unequal, and the ligule short and truncate.*

35. FESTU'CA. *L.* Fescue-grass.

Panicle lax. Glumes unequal. Paleæ lanceolate, awned, or bristle-pointed at the summit; inner one minutely ciliated. Ligule of upper sheath very small.

* Outer palea terminating in a long bristle (except 3 γ); leaves very narrow; ligule bi-lobed.

† Lower glume obsolete.

1. F. *uniglúmis.* *B.* 6. E. I.-4. Raceme 2-ranked, turned to 1 side; flor. compressed, keeled, shorter than the bristles.—Sea-shores.

† Lower glume prominent, not obsolete.

‡ Bristles much longer than paleæ.

2. F. *bromoides.* *A.* 6, 7. 15. Panicle 1-seeded, contracted; glumes very unequal; fl's terate, monandrous; stem leafless above.—Dry places.

β. *pseudo-myúrus.* stem leafy above, branched below.

‡ Bristles shorter than paleæ, or 0.

3. F. *ovína.* *P.* 6. 20. Stem, under the panicle, rough and angular; root fibrous; spikelets in a close, 1-sided panicle, of 6 flor.; leaves setaceous, tufted.—Dry pastures.

β. *cæsia.* stouter and taller, glaucous.
γ. *tenuifólia.* paleæ acuminate, not mucronate; leaves long, slender.
4. F. *rúbra.* Stem, panicle, and spikelets as last; leaves involute, setaceous, downy above; root creeping.—Dry, sandy places.
P. 6. 10.
5. F. *duriúscula.* Stem smooth under the panicle; spikelets of about 6 flor., and unilateral; stem-leaves nearly plane, those of root setaceous; root creeping.—Waste ground.
P. 6, 7. 20.
β. *hirsúta.* outer palea hairy.

* Outer palea awned or not; leaves broad; ligule imperceptible.

† Spikelets arranged in a simple panicle, or a 2-sided spike.

6. F. *praténsis.* Panicle simple, slightly turned to one side; spikelets ovate-lanceolate; flor. numerous, cylindrical; paleæ obscurely ribbed; awn very short.—Pastures.
P. 6, 7. 20.
β. *loliácea.* spikelets rarely sessile, in a 2-sided spike; awn obsolete.

† Spikelets in compound, somewhat drooping panicles.

7. F. *elátior.* Awn of the paleæ extremely short; spikelets ovate-lanceolate, of 5-10 flor.; outer palea obscurely 5-ribbed; leaves linear-lanceolate.—Wet meadows.
P. 6, 7. ?
8. F. *gigántea.* Awn of the paleæ very long; spikelets ovate-lanceolate, of about 5 flor.; outer palea 5-ribbed; leaves lanceolate, flat, acute.—Thickets near the sea.
P. 7. 17.
β. *triflóra.* panicle somewhat erect; spikelets of about 3 flor.

36. BRO'MUS. *L.* Brome-grass.

Panicle lax. Spikelets more than 5-fl'd. Paleæ lanceolate, outer one awned below the bifid extremities. Ligule of upper leaf prominent. Styles arising from below the summit of ov.

* Large glume 7-ribbed.

† Summit of large glume midway between its base and apex of third flor.

1. B. *mollis.* Glumes and paleæ hairy; panicle close; flor. closely imbricated, erect in fl. and fruit.—*Passim.*
A. 5, 6. 20.
β. *pseudo-velutínus.* spikelets and leaves densely pubescent; panicle quite simple.
γ. *racemósus.* panicle somewhat compound; glumes and paleæ scabrous, not hairy.
δ. *arenárius.* panicle quite simple; simple ped. very short.

† Summit of large glume midway between its base and apex of second flor.

2. B. *secalínus.* Leaves hairy, with nearly glabrous sheaths; spikelets of about 7 flor., glabrous, oblong, erect, slightly drooping in fruit, the flor. thin, laxly imbricated; outer palea not twice as long as broad.—Corn-fields.
A. 6, 7. 16.
β. *velutínus.* panicle nearly simple; flor. large, downy.
3. B. *commutátus.* Leaves and sheaths hairy; spikelets of about 11 flor., glabrous, oblong-lanceolate, slightly drooping; flor. not so lax in fruit as last; palea twice as long as broad.—Corn-fields.
A. 6, 7. 20.

* Large glume 3-ribbed.

† Awn longer than the glumes; outer palea 7-ribbed.

4. B. *stéritis.* Panicle drooping; ped. long, slightly branched; spikelets linear-lanceolate; paleæ scabrous, shorter than the awn; leaves pubescent.—Fields and hedges.
A. 6, 7. 20.

5. B. *máximus.* Panicle erect, lax, at length nodding, slightly branched;
A. 7. C. ped. elongated after flowering; spikelets lanceolate, downy; palea ½ the length of awn; leaves downy on both sides.—Sandy places.

6. B. *Madriténsis.* Panicle erect, simple; ped. short; spikelets lanceolate;
A. 6, 7. E. S.-4. paleæ sub-scabrous, as long as awn; leaves sub-glabrous. —Barren wastes.

β. *rigidus.* pedicels, rachis, and glumes pubescent.

† Awn much shorter than flor.

7. B. *ásper.* Panicle drooping; flor. remote, sub-cylindrical; outer palea
A. 6, 7. 19. 7-ribbed; root-leaves very narrow, ciliated.—Woods and hedges.

β. *villósus.* outer palea hairy.

8. B. *eréctus.* Panicle erect; flor. remote, linear-lanceolate; outer palea hairy, 5-ribbed; leaves broad, hairy.—Damp woods.

37. DA'CTYLIS. *L.* Cock's-foot-grass.

Panicle with the secondary branches short, very dense and 1-sided. Spikelets of not more than 4 flor. Palea minutely awned.

1. D. *glomeráta.* Panicle branches distant, bearing ovate, 1-sided clusters of
P. 6, 7. 20. spikelets; root cæspitose.—Meadows.

38. CYNOSU'RUS. *L.* Dog's-tail-grass.

Panicle spiked, 1-sided, each spikelet with a pectinate bract at its base. Outer palea with a rough, terminal seta.

1. C. *cristátus.* Infl. linear, spikate, unilateral, straight; paleæ with a very
P. 8. 20. short awn.—Pastures.

2. C. *echinátus.* Infl. capitate, spikate, unilateral, recurved; paleæ with
A. 7. E.-1. awns their own length.—Sandy places in the South.

39. TRI'TICUM. *L.* Wheat or Wheat-grass.

Spikelets placed singly on each side of rachis. Glumes 2, opposite.

* Glumes unequal. (BRACHYPODIUM *Beauv.*)

1. T. *sylváticum.* Spike drooping; spikelets distant, nearly cylindrical, hairy;
P. 7. 20. setæ of the upper flor. longer than the paleæ; root fibrous. —Woods and hedges.

2. T. *pinnátum.* Spike erect; spikelets nearly cylindrical, hairy; setæ of
P. 7. E. I.-8. upper flor. shorter than their paleæ; root creeping.—Heaths.

* Glumes equal. (TRITICUM.)

† Stem rough.

3. T. *cristátum.* Spikelets of 4 flor.; glumes subulate, keeled, with ter-
P. 7. S.-1. minal setæ; outer palea with a seta as long as itself.—Sea-side between Arbroath and Montrose.

† Stem smooth.

‡ Setæ longer than the flor.; root fibrous.

4. T. *caninum.* Spikelets of about 5 flor.; glumes 3-5-ribbed; rachis
P. 7. 17. hispid; leaves flat, rough on both sides.—Banks.

‡ Setæ 0, or very short; with underground, creeping stems.

5. T. *répens.* P. 7. 20. Spikelets 4-8-fl'd; rachis rough; glumes acute, 5-7-ribbed; outer palea acute; leaves flat.—Waste places.
β. *arístatum.* outer palea with a seta less than ½ its length.
γ. *littorále.* spike contracted; rachis smooth and glabrous; setæ short.

6. T. *júnceum.* P. 7. 10. Glaucous; spikelets 4-6-fl'd; glumes obtuse, 6-11-ribbed; outer palea obtuse; rachis smooth; leaves involute, pungent.—Sea-shores.
β. *scábrum.* rachis slightly rough at the angles; leaves 0, minutely scabrous above.

Tr. XIII. *HORDEIDÆ. Infl. spiked, or shortly racemed. Spikelets on both sides of rachis, of* 1-18-*flor. Paleæ setigerous or awned;* (*awn sometimes* 0).

40. HO'RDEUM. *L.* Barley.

Spikelets of 1 flor., in threes from each tooth of the rachis. Glumes terminating in bristly setæ, both on one side of the rachis.

* Glumes of the middle spikelet linear-lanceolate, fringed,

1. H. *murínum.* *A.* 6, 7. 20. those of the lateral, imperfect ones, setaceous, scabrous.—Waste places.

* Glumes of the middle spikelet not fringed,

2. H. *marítimum.* *A.* 6. 5. the inner one of the lateral, imperfect flor. half-ovate, the rest setaceous.—Sandy pastures.

3. H. *pratense.* *A.* 7. 15. Glumes all setaceous, rough; lateral flor. imperfect.—Damp meadows.

4. H. *sylváticum.* *A.* 7, 8. E.-5. Glumes all subulate, rough; lateral flor. perfect, intermediate one often barren.—On calcareous soil.

41. E'LYMUS. *L.* Lyme-grass.

Spikelets arranged in pairs on each side of rachis. Glumes 2 on the same side of the spikelet, 2-3-fl'd, all perfect.

1. E. *arenárius.* *P.* 7. 20. Spike close, erect; rachis flat, not winged; glumes lanceolate, downy, as long as flor.; leaves involute, pungent.—Sea-shores.

2. E. *geniculátus.* *P.* 7. E.-1. Spike lax, bent down, at an angle; rachis winged; glumes subulate, glabrous, longer than flor.; leaves involute, pungent.—Salt marsh, Gravesend.

42. LO'LIUM. *L.* Darnel or Rye-grass.

Spikelets single on each side of rachis, with many flor., and but 1 glume, rarely 2, but then the glume is as long as the spike.

1. L. *perénne.* *P.* 6. 20. Spikelets 6-8-fl'd, longer than glume; flor. not awned; root bearing barren shoots.—Way-sides.
β. *arístatum.* outer palea with a long awn.
γ. *ténue.* spikelets few-fl'd; leaves slender.

2. L. *multiflórum.** *A.* 6. E. S.-5. ? Spikelets 10-14-fl'd, longer than glume; outer palea with a long awn; root without barren shoots.

3. L. *temuléntum.* Spikelets about 6-fl'd, equal to or shorter than glumes;
A. 6, 8. 16. outer palea as long as its awn.—Fields.
β. *arvénse.* flor. 4 or 5, with short awns or 0.

ORDER XCIII.—CYPEREÆ.

Innocuous herbs, with narrow, grass-like *leaves*, their *bases* often sheathing the stem, *the sheaths not being slit.* Stem solid, mostly angular. *Fl's* perfect, or diclinous, *consisting of imbricated, solitary glumes.* Stam. 1-7, 10 or 12; anth. attached by their base, entire at apex, 2-celled. Ov. often surrounded by the rudiments of a perianth, in the form of setæ or bristles, which is sometimes, however, membranous; *ovule single, erect; style 2 or 3-fid;* stigmas 2-fid. *Embr.* minute *within the base of the* mealy or fleshy *alb.*

* Fl's diclinous.
- Spikelets 2-fl'd, the upper fl. staminiferous, the lower pistiliferous. Fruit not enclosed in the perianth. . } 11. ELYNA.
- Spikelets monœcious, the staminiferous ones being terminal. Fruit enclosed in the urceolate perianth. . . } 2. CAREX.

* Fl's perfect.
- † Flor. with permanent, hypogynous setæ,
  - ‡ which are much longer than the glumes. . . 5. ERIOPHORUM.
  - ‡ Setæ equal to, or shorter than the glumes.
    - § Lower glumes destitute of stam. or pistil.
      - Spikelets in 2 rows, on a zigzag rachis, each with a bract at base. . . . } 6. BLYSMUS.
      - Spikelets condensed into an ovate head, and surrounded by a many-leaved invol. . } 10. RHYNCHOSPORA.
    - § Lower glumes with stam. and pistils.
      - Spikes in clusters. Style deciduous. . . 8. SCIRPUS.
      - Spikes solitary. Style persistent. . . 9. ELEOCHARIS.
- † Hypogynous setæ 0, or fugaceous.
  - § Scales of the spikelets in 2 rows. Style 3-fid.
    - Spikelets 1-3-fl'd. Outer scales smaller, empty. 2. SCHŒNUS.
    - Spikelets many-fl'd. All the scales equal, fertile. 1. CYPERUS.
  - § Scales imbricated on all sides.
    - ‖ Style bifid below,
      - the branches bifid or trifid, . . 3. CLADIUM.
      - the branches undivided. . . 5. ELEOGITON.
    - ‖ Style trifid. . . . . 4. ISOLEPSIS.

N.B.—The following is, with a slight alteration, the arrangement of Nees von Esenbeck.

Tr. I. *CYPERIDÆ. Fl's perfect. Spikelets with the scales imbricated in 2 rows.*

1. CYPE'RUS. *L.* Galingale.

Spikelets arranged in compound, irregular umbels, with a leafy invol. Bracts imbricated in 2 rows, in pairs, the outer smallest at base, the inner adhering to the rachis, each pair with 1 fl. Setæ 0. Style trifid. Fruit triangular.

1. C. *lóngus.* Spikelets in erect, twice compound umbels, the ped. unequal, with 2 or 3 long leaves at base; root creeping.—In the South.
P. 7. (r. Br.) E.-1.

2. C. *fúscus.* Spikelets in small, roundish heads, with 3 unequal leaves at base; root fibrous.—Marsh near little Chelsea.
P. 8, 9. (+Br.) E.-1.

2. SCHŒ'NUS. *L.* Bog-rush.

Spikelets 2-4-fl'd, in a terminal capitule, with 2 or more sheathing leaves at base. Bracts 6-9, in 2 or 3 rows, the lower ones empty. Setæ 0. Style 3-fid.

1. S. *nigricans.* *P.* 6. (+Br.) — Stem round, naked; spikelets 5-10, in a roundish head, 9. shorter than one of the bracts of invol.—Turfy bogs.

3. CLA'DIUM. *Schrad.* Twig-rush.

Spikelets 1-2-fl'd. Glumes 5 or 6, the outer ones empty and smaller. Fruit with a thick, fleshy coat. Setæ 0.

1. C. *Mariscus.* *P.* 7. — Panicle much branched, lateral and terminal; spikelets 6. capitate, conglomerate; stem rounded, leafy; margins of leaves and keel rough.—Bogs.

Tr. II. *SCIRPIDÆ.* *Fl's perfect.* *Spikelets imbricated on all sides.*

4. ISOLE'PSIS. *Br.* Club-rush.

Spikelets many-fl'd, fascicled, with a 2 or more leaved invol., the lower one long. Setæ 0. Style 3-fid, nearly equal at base, deciduous.

* Heads of 1-2 sessile, and 2 or 3 unequally stalked spikelets.

1. J. *Holoschœ'nus.* *P.* 9. (Br. ‖ W.) E.-1. — Stem rounded; leaves subulate, channelled; bracts obovate, emarginate, with a short mucro.—Sandy coast, Devon.
   β. *élegans.* — stem compressed at summit; bracts obovate, with a projecting mucro.—Somerset.

* Spikelets 1-3, all sessile.

2. J. *setáceus.* *P.* 7. (Br. ‖ W.) 20. — Stem compressed, with 1 or 2 leaves at base, the lower bract of invol. erect, elongated, continuous with the stem; stam. 2; fruit transversely striated.—Moist places.
3. J. *Saviána.* *P.* 7. (—G. * br.) 6. ? — Stem terate, leafy below; bracts of invol. shorter than the spikelets; stam. 3; fruit sub-globose, rough with slightly raised points.—Wet bogs.
   β. *monóstachys.* — spikelet solitary, with a short bract.

5. ELEOGI'TON. *Link.*

Spikelets terminal, solitary, naked. Bracts gradually lessening, all floriferous. Setæ 0. Style bifid, deciduous. Fruit 2-edged, mucronate.

1. E. *flúitans.* *P.* 6, 7. (r. Br.) 17. — Stem floating, compressed, branched, leafy; spikes ovate; glumes nearly equal, obtuse; fruit obovate, tipped with the narrow base of style.—In water.

6. BLY'SMUS. *Panz.*

Spikelets arranged on a zigzag rachis, in a 2-rowed spike. Scales imbricated in 4 rows. Ov. with persistent, toothed setæ at base. Style bifid, quite compressed.

1. B. *compréssus.* *P.* 6, 7. (r. Br.) E. S.-9. — Stem almost triangular; spikelets 6-8-fl'd, the lower bract at its base leafy; setæ with strong, deflexed teeth; leaves linear, flat.—Wet places near the sea.

2. B. *rúfus.* Stem terate; spikelets 2-4-fl'd, equal to the membranous
P. 7. (+Br.) 7. bract; setæ slender, with spreading or ascending teeth; leaves very narrow, channelled.—Marshes.

7. ERIO'PHORUM. *L.* Cotton-grass.

Spikelets many-fl'd, either solitary, or in clusters, with an invol. Scales imbricated on all sides. Fruit with very long, silky hairs at its base. Style 3-fid.

* Spike solitary; upper sheaths inflated, without leaves.

1. E. *vaginátum.* Stem triangular above; spike oblong; leaves long, se-
P. 5. 14. taceous; fruit obovate.—Mountain bogs.

2. E. *capitátum,* Stem rounded; spike sub-globose; leaves linear-subulate;
P. 8. S.-1. fruit oblong-obovate.—Summit of Ben Lawers.

* Spikelets many.

3. E. *polystáchyon.* Stem round; leaves linear, flat, triangular in the upper
P. 6. 14. half; pedicels of spikes smooth; setæ 3 times as long as spike.—Bogs.

β. *angustifólium.* stem nearly round; leaves channelled near the base; setæ 4 times as long as spike.

4. E. *latifólium.* Stem triangular above; leaves linear, nearly flat, contracted
P. 5, 6. 5. above the middle into a triangular point; pedicels scabrous; setæ 2 or 3 times as long as spike.—Bogs.

5. E. *grácile.* Stem somewhat triangular; leaves narrowly linear, tri-
P. 6, 7. E. S.-1. quetrous; pedicels downy; fruit linear-oblong, 3 cornered; setæ twice as long as spike.—Bogs. Yorkshire. Guildford.

8. SCI'RPUS. *L.* Club-rush. Bull-rush.

Scales imbricated on all sides, equal, 1 or 2 outer glumes empty. Setæ bristly, permanent. Style 2-3-fid, deciduous. Fruit 2-edged.

* Stem terate. Stigmas 2.

1. S. *lacústris.* Spikelets in compound, almost terminal panicles, mostly
P. 6, 7. 19. shorter than the rounded, almost leafless stem; glumes emarginate, mucronate, glabrous, fringed.—Rivers, &c.

β. *glaúcus.* smaller and glaucous.

* Stem triangular, especially in the upper part.

† Stem leafy; stigmas 3, very rarely 2.

2. S. *maritimus.* Spikes in a dense, terminal cluster, with an invol. of several
P. 7. 11. leafy bracts; glumes 2-fid, with an intermediate mucro. —Salt marshes.

3. S. *sylváticus.* Spikes in a very compound cyme, with an invol. of several
P. 7. 15. leafy bracts; glumes entire, apiculate.—Moist places.

† Stem with sheaths destitute of leaves; stigmas 2.

4. S. *carinátus.* Stem obtusely 3-angular above; invol. of 2 unequal bracts;
P. 6, 7. E.-1. glumes emarginate, mucronate, slightly punctate-scabrous, pilose, fringed.—Rivers near London. Sussex.

5. S. *triquéter.* Stem acutely triangular throughout; invol. 0; glumes
P. 8. E.-1. emarginate, glabrous, fringed, obtusely lobed.—Banks of Thames. Sussex.

β. *púngens.* glumes acutely lobed; anth. with a subulate, fringed point.

9. ELEOCHA'RIS. *Br.* Spike-rush.

Spike solitary. Glumes imbricated on all sides, uniform, nearly all floriferous. Setæ 1-12, toothed. Style 2 or 3-fid. Fruit lenticular, crowned with the broad base of styles.

* [1] Stem with sheaths bearing scales and subulate leaves below,

1. E. *cæspitósa.* *P.* 6-8. 18. — rounded, or slightly compressed; 2 outer glumes longer than the very small spikes, ending in long, rigid points; stigmas 3; fruit mucronate; setæ 6.—Turfy heaths.

* [2] Stem with sheaths destitute of leaves.

† Stigmas 2.

2. E. *palústris.* *P.* 6, 7. 20. — Stem rounded; root much creeping; fruit lenticular, plano-convex; setæ 4; outer glume smallest.—Wet places.

† Stigmas 3.

‡ Setæ 2 or 3.

3. E. *aciculáris.* *P.* 7, 8. 12. — Stems numerous, slender, 4-angular; spike ovate, acute; fruit with numerous furrows and striæ.—Wet places.

‡ Setæ 4-6.

4. E. *multicaúlis.* *P.* 7. 13. — Outer glumes smallest; stem rounded; root hardly creeping; fruit obovate, 3-angular, shorter than the 6 setæ.—Wet places.

5. E. *pauciflóra.* *P.* 6-8. 13. — Outer glumes large, shorter than, but enclosing the spike; root with long, jointed runners; fruit obovate-mucronate, 3-angular, longer than the 6 setæ.—Moors.

* [3] Stem destitute of leaves or sheaths, or with only 1 sheath.

6. E. *párvula.* *P.* 7. E.-1. — Spike terminal, few-fl'd; leaves filiform, acute; radical ones roundish, clasping; stigmas 3; 2 outer glumes the larger; bristles twice as long as fruit, with deflexed teeth.—Muddy flat near Lymington, Hants.

10. RHYNCHO'SPORA. *Vahl.* Beak-rush.

Spikes terminal and axillary, with a many-leaved invol. Lower glumes the smaller, and empty. Setæ 6-10. Style bifid, subulate. Fruit somewhat 3-cornered.

1. R. *álba.* *P.* 7. 12. — Spikelets in a compact corymb, as long as the outer bracts; stam. 2; leaves narrowly linear.—Wet places.

2. R. *fúsca.* *P.* 7, 8. E. I.-1. — Spikelets in an oval head, much shorter than the outer bracts; stam. 3; leaves filiform.—Bogs in South-west.

Tr. III. *ELYNIDÆ. Fl's diclinous. Ov. with 1 or 2 scales at its base.*

11. ELY'NA. *Schrad.*

Spikelets 2-fl'd, upper with 3 stam. only; lower pistilliferous, included in a long, sheathing bract. Ov. with 1 hypogynous, convolute scale. Stigmas 3.

1. E. *caricína.* *P.* 7. E. S.-3. — Spikelets aggregate, compound; leaves slender, shorter than the stem.—Moors, Durham. Yorkshire. Perthshire.

12. CA'REX. *L.* Sedge.

Fl's collected into an imbricated spike, each covered by a scale. *Fertile fl's* with a single, urceolate, persistent perianth. Style 1; stigmas 2-3. *Barren fl's*:—stam. 3, without a perianth.

* Spike single, or very rarely with a second (6), simple.

† Stigmas 2.

1. C. *dioica.* *P.* 5, 6. — 16. Spike diœcious; fruit ascending, ovate, shortly acuminate, rough on the angles above; leaves and stem smooth; root creeping.—Bogs.

2. C. *pulicáris.* *P.* 5, 6. — 20. Upper half of spike barren; fruit remote, at length deflexed, oblong-lanceolate, smooth and shining; root not creeping.—Bogs.

† Stigmas 3.

3. C. *rupéstris.* *P.* 7. — E. S.-1. Upper half of spike barren; fruit obovate, triquetrous, prostrate, adpressed, hardly longer than the obtuse, persistent glumes.—High mountains.

4. C. *pauciflóra.* *P.* 6, 7. — 4. 1 or 2 terminal flor. barren; fruits few, lanceolate-subulate, patent or reflexed, longer than the deciduous glumes.—Bogs.

* Spikes compound, continuous or interrupted, of more than 2 spikelets.

† Stigmas 2.

‡ [1] Terminal spike or spikelet with both barren and fertile fl's.

§ Sterile fl's at the apex of the spikelets.

‖ Root creeping.

5. C. *incúrva.* *P.* 6. — S.-2. Spikelets in a roundish head, with a membranous bract at base; stem smooth, compressed, the beak notched on one side.—Sea-shore, North of Scotland.

6. C. *divisa.* *P.* 5, 6. — 3. Spikelets in an ovate head, sometimes interrupted below, with a leafy bract at base; stem roughish at summit; fruit plano-convex, the beak cloven.—Marshes.

‖ Root fibrous.

¶ Lowest bract much shorter than the inflorescence.

** Spikelets simple. Stem triangular, with rough angles.

7. C. *muricáta.* *P.* 6. — 16. Spikelets approximate, in an oblong spike; fruit ovate, acuminate, bifid, finely serrate above, divergent; nut ovate.—Gravelly pastures.

8. C. *divúlsa.* *P.* 6. — 10. Spikelets distant, the upper approximate; fruit ovate, acute, bifid, smooth, ascending; nut ovate-oblong.—Shady pastures.

** Spikelets compound.

†† Stem acutely triangular, with flat faces.

9. C. *vulpina.* *P.* 5, 6. — 20. Spike cylindrical, crowded; fruit ovate-acuminate, plano-convex, bifid, finely serrate above, divergent.—Wet places.

10. C. *paniculáta.* *P.* 6. — 19. Spike panicled, with elongated, diverging branches; fruit deltoid, gibbous, with a 2-toothed, serrulate, triangular, winged beak.—Bogs.

†† Stem triangular, with convex faces.

11. C. *paradóxa.* Spikes narrowly panicled, the lower branches rather distant;
P. 7. E. I.-1. fruit ovate, gibbous, with numerous short elevated ribs near the base; beak 2-toothed, serrulate, not winged.—Bogs, near Mullingar.

12. C. *teretiúscula.* Spikelets ovate, in an oblong, compact spike; fruit ovate,
P. 7. 16. gibbous, with 3 or 4 central ribs on the convex side, and a 2-toothed, serrulate, winged beak.

¶ Lowest bract as long as or longer than the inflorescence.

13. C. *Bœnninghausiána.* Lower spikelets distant, of alternate, secondary spikelets;
P. 6. E.-1. fruit as long as glumes, lanceolate, tapering into a nearly entire beak, strongly serrated from below the middle; leaves channelled.—Near Hertford.

14. C. *axilláris.* Lower spikelets very distant, of crowded, secondary spike-
P. 6. 5. lets; fruit longer than glumes, oblong-ovate, tapering, bifid and serrated above; leaves flat.—Marshes.

§ Sterile fl's at the base of the spikelets.

‖ Spikelets 3-6,

¶ forming a more or less interrupted spike.

15. C. *stelluláta.* Spikelets 3 or 4, roundish; fruit spreading, broadly ovate-
P. 5, 6. 20. acuminate, plano-convex, striated, the beak bifid, with serrated edges.—Marshes. Heaths.

16. C. *cúrta.* Spikelets elliptical, about 5, slightly distant; fruit erect,
P. 6. 15. broadly ovate, acute, plano-convex, faintly striated, rough at the edges above, as long as the scales.—Bogs.

¶ Spikelets forming a dense, continuous head or spike.

17. C. *leporína.* Spikelets 3-4, roundish-elliptical, contiguous; fruit elliptic,
P. 8. S.-1. rather longer than the ovate scales, the beak almost entire and scarious at the summit, with smooth edges.—Loch-na-Gar.

18. C. *ovális.* Spikelets about 6, oval, crowded; fruit ovate-acuminate,
P. 7. 19. as long as the lanceolate scales, the beak bifid, with a broad, rough, membranous margin.—Bogs.

‖ Spikelets more than 6,

19. C. *elongáta.* oblong, approximate; bracts very short-pointed; fruit
P. 6. E. I.-2. patent, oblong-acuminate, many-ribbed; beak almost entire, with rough edges; nut linear-oblong.—Marshes.

20. C. *remóta.* Upper spikelets crowded, lower very distant, with nar-
P. 6. row bracts longer than infl.; fruit oblong-ovate, angular, bifid at the point, serrated above; nut elliptical.—Damp places.

β. *tenélla.* spikelets small; fruit doubly convex.

‡ [2] Terminal spikelets of fertile fl's alone, as well as the inferior ones,

21. C. *intermédia.* those intermediate barren, all collected into an oblong, in-
P. 5, 6. 15. terrupted spike; fruit ovate-lanceolate, acutely margined, longer than glumes, with serrated edges above; stem triangular; leaves plane; root creeping. — Wet meadows.

‡ [3] Terminal spike of barren fl's alone.

§ Spikelets collected into an interrupted spike.

22. C. *arenária.* Intermediate spikelets with barren fl's at the summit;
P. 6. 11. lower fertile; fruit ovate, nerved, winged, and finely

serrate above, shorter than glumes; root creeping.—Sands.

§ Spikes several, distinct.

‖ Bracts auricled or sheathing at base.

23. C. *vulgáris.* *P.* 5, 6. — 20. Spikes erect, sub-sessile, cylindrical; bracts with short auricles, foliaceous; fruit elliptical, plano-convex, many-nerved below, with a short, entire, slender beak; sheaths of leaves not webbed.—Marshes.

24. C. *cæspitósa.* *P.* 5. — ? Spikes erect, the fertile spikes sub-sessile, oblong; bracts with long auricles, lowest slender, foliaceous, short; fruit elliptical, acute, lenticular, not ribbed, rather patent, with a short, entire beak; sheaths of leaves slightly webbed.—Marshes.

25. C. *stricta.* *P.* 6. — 12. Spikes erect, fertile ones sub-sessile, elongate, cylindrical; lowest bract foliaceous, short; fruit elliptic-oblong, acute, compressed, ribbed; beak short, entire; sheaths of leaves with a filamentous web.—Marshes.

26. C. *acúta.* *P.* 6. — 19. Spikes drooping, long, cylindrical, slender, erect in fruit; lowest bract long, with elongated auricles; fruit oblong, doubly convex, with a short, entire beak; sheaths not filamentous.—Wet places.

‖ Bracts not auricled or sheathing. Lower spike stalked.

¶ Barren spikes slender, acute,

27. C. *Gráhami.* *P.* 7. — S.-1. mostly single; fertile 1 or 2, ovate, obtuse; fruit oblong-ovate, nerved, inflated, narrowed into a short, bifid beak, twice as long as the acute glumes.—Clova.

¶ Barren spikes short, obtuse,

28. C. *saxátilis.* *P.* 6. — S.-1. rarely 2; fertile 1 or 2, roundish, ovate, lower one stalked, erect; fruit ovate, nerveless, inflated, with a short, notched beak, longer than the rather obtuse glumes.—Mountains.

29. C. *rígida.* *P.* 6, 7. — 3. Barren spike 1, fertile, short, oval; lower bract foliaceous, shorter than infl.; fruit elliptical, doubly convex, ribless, with a very short, entire beak; stem rough towards the summit.—Alpine rocks.

30. C. *aquátilis.* *P.* 7. — S.-1. Barren spike 1 or more; fertile elongated, narrowed below; bracts foliaceous, longer than the infl.; fruit as last; stem smooth.—Clova Mountains.

† Stigmas 3.

‡ Terminal spikelets with both barren and fertile fl's, the rest fertile.

31. C. *Vahlii.* *P.* 7, 8. — S.-1. Spikes roundish or oblong, contiguous; fruit obovate, triquetrous, scabrous above, shortly beaked, longer than the ovate, acute glumes.—Rocks, Loch Callater. Clova.

32. C. *canéscens.* *P.* 7. — I.-1. Spikes oblong, continuous, the lowest shortly stalked, and rather distant; fruit oval, obtuse, trigonous when ripe, 2-toothed, rough, shorter than the ovate, cuspidate glumes; sheaths of leaves with a filamentous web.—Islet in Lough Neagh.

33. C. *atráta.* *P.* 5, 6. — 1. Spikes ovate-oblong, shortly stalked, at length drooping; fruit roundish-ovate, compressed, with a slightly notched beak, broader, but not longer than the acute glumes.—Alpine pastures.

‡ Terminal spike with barren fl's alone.
§ Barren spike single.
‖ All or greater part of the spikes at the apex of the stem.
¶ Fertile spikes sessile, or nearly so with included ped.
** Fruit downy.
†† Root creeping.

34. C. *præcox.* P. 4, 5. — 20. Fertile spikes 1-3, oblong, approximate, sessile; bracts clasping, the lowest foliaceous, and slightly sheathing; fruit ovate, trigonous, entire at summit; glumes broadly ovate, acuminate.—Dry places.

35. C. *tomentósa.* P. 6. — E.-1. Fertile spikes 1 or 2, shortly cylindrical, obtuse, slightly stalked; lowest bract foliaceous, with a very short sheath; glumes broadly ovate, acute; fruit obovate, globose; beak short, slightly emarginate. — Merston Measy, Wilts.

†† Root fibrous.

36. C. *montána.* P. 6. — E.-1. Fertile spikes 1-3, ovate, sessile; bracts small, membranous, the lowest with a subulate point; fruit narrowed below, oblong-obovate, trigonous, beak short, notched. —Tunbridge-wells.

37. C. *pilulifera.* P. 5. — 20. Stem scabrous, decumbent; fertile spikes about 3, roundish, sessile; bracts small, sub-foliaceous, not sheathing; glumes broadly ovate, strongly mucronate; fruit stalked, sub-globose, beak short, bifid.—Wet heaths.

** Fruit glabrous.

38. C. *flava.* P. 5, 6. — 20. Leaves broad; fertile spikes roundish-oval, rather distant, sub-sessile; sterile one distinctly stalked; bracts long, foliaceous, with short sheaths; fruit obovate, inflated, spreading, with a more or less deflexed, rough-edged, bifid beak.—Wet places.

β. *Œderi.* sterile spike nearly sessile, all close together; fruit with a short, straight beak.

39. C. *extensa.* P. 6. — 8. Leaves long, narrow, convolute; fertile spikes oblong, close together, all sub-sessile; bracts very long, foliaceous; fruit ovate, not spreading, triquetrous, striated, with a short, straight, smooth-edged, bifid beak.—Marshes near the sea.

¶ Fertile spikes on exserted ped.,
** drooping and abbreviated,
†† lax and few-fl'd.

40. C. *capillaris.* P. 6. — E. S.-2. One of the bracts sheathing, and including 2 or more ped.; fruit oblong, triangular, acuminate, as long as the ovate, membranous, obtuse glumes; root tufted. — Teesdale. Highland Mountains.

41. C. *rariflora.* P. 6. — S.-1. Bracts not sheathing; fruit oblong-obovate, somewhat acute, striated, nearly terate, shorter than the broad, ovate, acuminate glumes; root creeping. — Mountain bogs.

†† Fertile spikes with densely imbricated fl's.

42. C. *limosa.* P. 6. — 8. Bracts not sheathing, auricled; fruit roundish-obovate, compressed, ribbed, with a short, acute beak, as long as the

broadly oval, acute glumes; leaves rough at edges; root creeping.—Bogs.

β. *irrígua.* leaves broader, rough at the edges; fruit shorter than glumes, faintly ribbed.

** Fertile spikes erect,

43. C. *digitáta.* and as well as the barren one, linear, laxly-fl'd; bracts
P. 4, 5. E.-8. membranous, sheathing, obliquely truncate, pointletted; fruit obovate, triquetrous, downy, narrowed below, with a short, nearly entire beak.—Woods on limestone.

44. C. *palléscens.* Fertile spikes ovate; bracts foliaceous; fruit ovate-oblong,
P. 6. 16. doubly convex, obtuse.—Marshes.

‖ Spikes distant, descending along the stem. Fruit glabrous.

¶ Spikes short or erect,

** of 3 or 4 fl's.,

44. C. *húmilis.* concealed in the membranous sheathing bracts; fruit ob-
P. 4, 5. E.-2. ovate, subtriangular, narrowed below, with an entire, oblique mouth.—Limestone hills.

45. C. *depauperáta.* Sheaths of leafy bracts much shorter than ped.; fruit large,
P. 6. E. S.-2. nearly globose, having a long, bifid beak with rough edges.—Dry woods, Surrey. Kent. Forfar.

** Spikes of more numerous fl's.

†† Ped. of all but the lowest spikes included, or nearly so, in the sheaths of the bracts.

46. C. *dístans.* Fertile spikes oblong; fruit ovate, triquetrous, equally
P. 5. 15. ribbed, smooth, with a narrow, short, bifid, rough-edged beak; glumes mucronate.—Marshes.

β. *punctáta.* upper ped. slightly exserted; glumes awned; fruit pellucidly punctate, with a smooth beak.

47. C. *binérvis.* Fertile spikes cylindrical; fruit ovate, triquetrous, with 2
P. 6, 7. 11. principal, green, sub-marginal ribs on the outer surface; beak smooth, broad, bifid; glumes mucronate.—Dry heaths.

†† Ped. all, or almost all exserted.

48. C. *fulva.* Fertile spikes oblong-ovate; glumes acute; fruit broadly
P. 6. 9. ovate, triquetrous, ribbed, with a rough-edged, bifid beak; stem sharply triangular, rough-edged.—Bogs.

β. *speirostáchya.* fertile spikes oblong, on longer stalks; beak of fruit smoother; stem bluntly triangular, almost quite smooth.

49. C. *panicéa.* Fertile spikes sub-cylindrical, with distant fl's; glumes
P. 6. 20. rather acute, with a green keel; fruit ovate-subglobose, inflated; beak short, terate, obliquely truncate.—Bogs.

β. *phæostáchya.* fruit with a recurved, obliquely bifid beak; bracts sheathing, hardly leafy.

¶ Spikes elongated or drooping.

** Sheaths more than ½ as long as ped.

50. C. *lævigáta.* Fertile spikes cylindrical; barren one triquetrous; glumes
P. 6. 20. acuminate; fruit ovate, attenuate, striated, with a long, bifid beak.—Bogs.

51. C. *strigósa.* Fertile spikes slender, filiform, nearly erect; fruit oblong-
P. 5, 6. 9. lanceolate, narrowed at both ends, triangular, ribbed,

slightly recurved, with an obliquely truncate mouth.—Thickets.

52. C. *péndula.* P. 5. — 15. Fertile spikes cylindrical, very long, pendulous; fruit ovate, shortly acuminate, tumid, with a short, trigonous, bifid beak.—Damp woods.

** Sheaths of bracts only ½ as long as ped., or 0.

53. C. *sylvática.* P. 5. — 19. Fertile spikes filiform, slender; bracts foliaçeous, sheathing ½ the ped.; glumes ovate, mucronate; fruit broadly ovate, triangular, narrowed into a long, cloven, smooth beak.—Moist woods.

54. C. *Pseudo-cýperus.* P. 6. — 11. Fertile spikes cylindrical, pendulous; bracts very leafy, not sheathing; glumes setaceous; fruit oblong, much attenuated into a deeply bifid beak.—Damp places.

§ Barren spikes 2 or more, very rarely single.

|| Fruit downy.

55. C. *glaúca.* P. 6. — 20. Barren spike sometimes 1; fertile long-stalked, at length drooping, cylindrical; bracts not sheathing; glumes ovate, acute; fruit elliptical, obtuse, entire.—Wet places.

β. *Micheliána.* glumes obtuse; fruit smaller, smoothish.

γ. *strictocarpa.* fertile spikes ovate; fruit obovate, dotted.

56. C. *filifórmis.* P. 5. — 9. Barren spikes 2 or more, fertile, distant, remote, nearly sessile, erect, oblong-cylindrical; bracts foliaceous, long, narrow; sheaths very small; glumes oblong-ovate, cuspidate; fruit with a short, deeply bifid beak; leaves channelled.—Bogs.

57. C. *hirta.* P. 4. — 20. Barren spikes 2 or more; fertile distant, erect, stalked, oblong-cylindrical; bracts long, foliaceous; lower sheaths nearly as long as ped.; glumes oval-lanceolate, cuspidate; fruit narrowing into a deeply divided beak; leaves flat, hairy, rarely glabrous.—Wet pastures.

|| Fruit glabrous; bracts foliaceous, without sheaths.

¶ Fruit inflated.

58. C. *ampullácea.* P. 6. — 18. Fertile spikes cylindrical, long, nearly erect; glumes lanceolate; fruit sub-globose, with a long, narrow, bifid beak; stem obtusely angled.—Bogs.

59. C. *vesicária.* P. 5. — 13. Fertile spikes cylindrical, slightly drooping; glumes lanceolate; fruit broadly ovate, with a subulate, bifid beak; stem sharply angled.—Bogs.

¶ Fruit not inflated.

60. C. *paludósa.* P. 5. — 16. Fertile spikes broadly cylindrical, obtuse; glumes of the, barren spike obtuse; fruit oblong-ovate, compressed, acute, striated, bifid at the point.—Ditches.

61. C. *ripária.* P. 5. — 17. Fertile spikes cylindrical, acute; glumes of the barren spike acute; fruit oblong-ovate, doubly convex, narrowed into a short, cloven beak.—Wet places.

ORDER XCIV.—ERIOCAULEÆ.

Marsh plants, with narrow, cellular, spongy leaves, sheathing at base. Fl. diclinous, bracteate, very minute. *Glumes* 2, *unilateral. Anth.* 2-*celled. Ov. superior,* 3 *or* 2-*celled, surrounded by a membranous tube,* with 2 or 3 teeth or lobes; ovules

solitary; *stigmas as many as there are cells in ovary.* Fruit a 3 or 2-celled capsule, with a loculicidal dehiscence. Seeds solitary, covered with rows of hairs; *embr. lying on the alb., at the end remote from the hilum.*

1. ERIOCAU'LON. *L.* Pipe-wort.

Fl's in a compact, scaly head. *Barren fl's* in centre. Perianth 2-6-fid, the inner segments united nearly to summit. Stam. 4-6. *Fertile fl's* in the circumference. Ov. surrounded by a deeply 4-parted investment. Stigmas 2-3.

1. E. *septanguláre.* *P.* 8. I. S.-1. Scapes striated, longer than the cellular, compressed, subulate, glabrous leaves; fl's 4-cleft, hairy at the extremities, as well as the scales; stam. 4; capsule 2-celled.—Lakes; Cunnemara. Hebrides.

ORDER XCV.—AROIDEÆ.

Herbs or shrubs. *Fl.* perfect, and with a 4-6, rarely a 3-parted perianth, or diclinous and naked, *arranged upon a spadix*, which is either surrounded by a large spathe, or without one. *Stam. very short.* Ov. free, 1 or many, 1-3-celled, and 1 or more seeded; stig. sessile; *ovules mostly erect.* Fruit indehiscent, baccate, or capsular. *Embr. in axis of a fleshy alb., with a lateral cleft for the emission of the plumule.*

- * Spadix enveloped in a spathe. Leaves with branched ribs. . 1. ARUM.
- * Spadix naked. Leaves with straight ribs.
  - † Fl's monœcious.
    - Spadix cylindrical. . . . . 2. TYPHA.
    - Spadix with the fl's in globose tufts. . . . 5. SPARGANIUM.
  - † Fl's perfect. . . . . 4. ACORUS.

Tr. I. *AROIDÆ. Fl. monœcious. Perianth* 0. *Spadix surrounded by a spathe, its summit naked. Leaves with branching ribs. Mostly acrid and poisonous.*

1. A'RUM. *L.* Cuckoo-pint. Wake-robin.

Spathe single, convolute at base. *Barren fl's:*—a number of 2-celled, sessile anth., clustered around the middle of the spadix. *Fertile fl's:*—a number of solitary pistils, clustered round its base. Berry 1-celled, many-seeded.

1. A. *maculátum.* *P.* 4, 5. (p. G.) 19. Leaves all radical, hastate-sagittate; spadix clavate, obtuse, shorter than spathe.—Hedge banks.

Tr. II. *TYPHAIDÆ. Fl. monœcious, surrounded by a setaceous or scale-like perianth. Spadix without a spathe. Leaves with parallel ribs. Innocuous.*

2. TY'PHA. *L.* Cat's-tail. Reed-mace. Bull-rush.

Sterile and fertile spadices cylindrical. Stam. 3 together, united below into 1 fil., surrounded by setæ. Ov. at length stalked, surrounded with setæ.

1. T. *latifólia.* *B.* 7. (Y. & Br.) 19. Leaves linear, nearly flat; sterile and fertile spadices continuous; perianth setaceous.—Margin of ponds.

2. T. *angustifólia.* Leaves linear, grooved below; sterile and fertile spadices a
P. 6, 6. (Y. & Br.) I2. little distant; perianth scaly.—Ponds.

3. SPARGA'NIUM. *L.* Bur-weed.

Sterile and fertile spadices globose. Fl's each with a single, 3-leaved perianth. Drupe dry, sessile, 1-seeded.

1. S. *ramósum.* Stem branched; leaves triangular at base, with concave
P. 7. (—Y.) 20. sides; stigmas linear.—Ditch-banks, &c.
2. S. *simplex.* Stem simple; leaves triangular at base, with flat sides;
P. 7. (—Y.) 20. stigmas linear.—Ditches.
3. S. *nátans.* Stem simple; leaves floating, flat, concave at base; stigma
P. 7. (—Y.) 14. ovate, very short.—Stagnant water.

Tr. III. *ACORIDÆ. Fl. perfect, surrounded by a perianth. Spadix naked. Leaves straight-ribbed.*

4. A'CORUS. *L.* Sweet-sedge.

Spathe 0. Perianth 6-parted, inferior. Stam. 6. Ov. 3-celled, many-seeded. Stigma sessile. Fruit dry.

1. A. *Cálamus.* Leafy summit of the flower-stalk rising high above the
P. 6. (—Y.) E. S.-8. spadix; scape, like the leaves, ensiform, flattened.—In water.

ORDER XCVI.—LEMNEÆ.

Mostly floating plants, with cellular, lenticular fronds or leaves, generally destitute of spiral vessels, and possessing no remarkable properties. *Fl's monœcious*, in the margins of the fronds, 2 *or* 3 *together*, and destitute of a perianth, but enclosed in a spathe, without a spadix. Stam. definite. *Ov. single*, 1-*celled;* stigma simple, nearly sessile; *ovules erect.* Fruit dry, indehiscent, 1 or more seeded. *Embr. mostly in axis of fleshy alb., with a lateral slit for the emission of the plumule*, or at the apex of the nucleus.

1. LE'MNA. *L.* Duck-weed.

Spathe 2-fl'd, membranous, urceolate, immediately beneath the margin of frond. Stam. 2. Fruit utricular. True leaves and stem 0.

* Roots solitary.
1. L. *trisúlca.* Fronds thin, pellucid, elliptic-lanceolate, with the caudate
A. 6. 14. root at one end, serrated at the other.
2. L. *minor.* Fronds obovate, compressed, opaque, slightly convex be-
A. 6, 7. 20. neath.
3. L. *gíbba.* Fronds obovate, nearly flat above, gibbous and spongy be-
A. 6-8. 10. neath.
* Roots numerous, clustered.
4. L. *polyrhiza.* Fronds roundish-obovate, compressed. Fl's unknown in
A. 10. Britain.

These four species are found in stagnant pools.

ORDER XCVII.—ALISMEÆ.

Aquatic herbs rarely with a milky juice, possessing no remarkable qualities. Fl. rarely diclinous, in racemes or panicles, rarely solitary. *Sep.* 3, sometimes petaloid. *Pet.* 3. Stam. definite or indefinite. *Ov.* superior, *of* 3, 6 *or more*, *distinct*, sometimes united *carpels;* ovules solitary, in pairs, or indefinite. Fruit of 1 or many pericarps, 1 or more seeded, dehiscent or indehiscent. *Alb.* 0. Embr. straight, or incurved; rad. next the hilum.

* Fl's perfect.
  † Ov. consolidated. Stam. 9. . . . . 1. BUTOMUS.
  † Ov. of distinct carpels. Stam 6.
    Carpels 6-8. . . . . 2. ACTINOCARPUS.
    Carpels numerous. . . . . 3. ALISMA.
* Fl's monœcious. Stam. 20. . . . . 4. SAGITTARIA.

Tr. I. *BUTOMIDÆ. Placentæ parietal, reticulated, many-seeded. Embr. straight or curved.*

1. BU'TOMUS. *L.* Flowering-rush.

Sep. 3, petaloid. Pet. 3. Stam. 9, 3 interior. Caps. 6, connected below, bursting inwards.

B. *umbellátus.* *P.* 6, 7. (—R.) 15. Leaves linear-subulate, trigonous; fl. bracteated, in umbels, having a 3-leaved spathe at their base.—Ponds, &c.

Tr. II. *ALISMIDÆ. Placentæ sutural, with* 1 *or* 2 *seeds. Embr. solid, doubled on itself.*

2. ALI'SMA. *L.* Water-plantain.

Fl's perfect. Sep. 3. Pet. 3. Stam. 6. Carpels numerous, clustered, 1-seeded, indehiscent.

* Fl.-stalks branched.
1. A. *ranunculoides.* *P.* 8, 9. (W.) 18. Fl. umbellate; caps. acute, arranged in a globose, squarrose head; leaves linear-lanceolate.—Bogs.
   β. *répens.* with creeping scions; fl. larger.
2. A. *plantágo.* *P.* 7. (W.) 9. Fl.-stalk panicled, with whorled, compound branches; caps. obtusely trigonal, circularly arranged; leaves ovate. Ponds, &c.
   β. *lanceoláta.* leaves lanceolate, attenuated below.
* Fl.-stalks simple from the joints of the stem.
3. A. *nátans.* *P.* 8. (W.) 2. Stem floating and rooting, leafy; carpels obliquely acuminate, in a globose head; leaves oval, obtuse.—Lakes, &c.

3. ACTINOCA'RPUS. *Br.* Star-fruit.

Carpels 6-8, radiating, 2-seeded, sometimes dehiscent, otherwise as *Alisma.*

1. A. *Damasónium.* *P.* 6, 7. (W.) E.-3 Stalks with 1-3 whorls of fl's; caps. 6, subulate, compressed, opening longitudinally; leaves 5-ribbed.—Pools, &c.

4. SAGITTA'RIA. *L.* Arrow-head.

Fl. monœcious. Sep. 3. Pet. 3. Stam. 20 in the barren fl's. Carpels numerous, 1-seeded, compressed, on a globose receptacle.

1. A. *Sagittifólia.* *P.* 8. (W.) E. I.-12. — Leaves sagittate, with lanceolate, straight lobes; fl.-stalks simple, with whorled fl's.—In water.

ORDER XCVIII.—JUNCAGINEÆ.

Aquatic or marsh herbs, of no important qualities. Fl. inconspicuous, sometimes diclinous. *Sep.* and *pet.* small, *uniform*, *herbaceous*, sometimes absent. Stam. 1, 2, 4, or 6. Anth. usually turned outwards, opening longitudinally. *Carpels single*, or 3, 4, or 6, *mostly distinct*. Ovules 1-2, erect or pendulous. Fruit dry. *Embr. exalb.*; rad. remote from hilum. *Plumule large*, issuing through a *lateral cleft* in the embr.

* Fl's perfect.	
† [1] Anth. 2. Carpels 4, 1-seeded.	4. RUPPIA.
† [2] Anth. 4. Carpels 4, 1-seeded.	3. POTAMOGETON.
† [3] Stam 6. Pet. 3. Sep. 3.	
Anth. sessile.	1. TRIGLOCHIN.
Anth. on slender filaments.	2. SCHEUCHZERIA.
* Fl's diclinous,	
concealed in 2 rows in a slit in the leaves.	6. ZOSTERA.
Fl. axillary, solitary.	5. ZANNICHELLIA.

1. TRIGLO'CHIN. *L.* Arrow-grass.

Perianth of 6 concave, deciduous pieces, 3 outer and 3 inner, bearing the sessile, extrorse anth. Carpels 3-6, 1-seeded, separating below from a central axis.

1. T. *palústre.* *P.* 8. (G.) 20. — Fruit linear, angular, 3-celled; leaves linear, fleshy, grooved, all radical; fl. in a solitary, lax spike.—Marshes.

1. T. *marítimum.* *P.* 6-8. (G.) 12. — Fruit broadly ovate, angular, 6-celled; leaves and infl. as last, but plant larger.—Salt marshes.

2. SCEUCHZE'RIA. *L.*

Perianth of 6 partly united pieces. Anth. on slender fil. Carpels 3, inflated, 2-valved, 1 or 2-seeded.

S. *palústris.* *P.* 7. (G.) E. S.-2. — Leaves few, alternate, in 2 rows, ½-cylindrical, with a minute pore near apex; fl. racemose, on a bracteated scape. Bogs.

3. POTAMOGE'TON. *L.* Pond-weed.

Fl's perfect, on a spadix, which issues from a spathe. Perianth of 4 scales; anth. sessile, opposite to them. Pistils 4, becoming 4 hard akenia.

* Upper leaves floating,
† all on long stalks,

1. P. *nátans.* *P.* 6, 7. 20. — coriaceous, elliptical; lower linear, sub-membranous, or wanting; nuts large, rounded on back when fresh, keeled when dry.

2. P. *oblóngus.* Upper leaves coriaceous, elliptic-oblong; lower linear-lanceolate; nuts minute, always rounded on back.
P. 7. ?

3. P. *plantagíneus.* Leaves membranous and pellucid; upper elliptic, often nearly sessile and orbicular; lower oblong; nuts minute, rounded on back, keeled when dry.
P. 6, 7. ?

† Submersed leaves sessile, or nearly so, narrowed at both ends.

‡ Ped. enlarged upwards; nuts obtuse on back.

4. P. *heterophýllus.* Floating leaves elliptical, sub-coriaceous, submersed, membranous, denticulate, apiculate.
P. 6, 7. 12.

‡ Ped. cylindrical; leaves lanceolate, entire, not pointed.

5. P. *rufescens.* Leaves reddish, submersed, membranous, lanceolate, many-ribbed, floating, sub-coriaceous, obovate, shortly stalked; nuts acutely keeled.
P. 7. 10.

6. P. *lanceolátus.* Leaves green, submersed, membranous, 5-7-ribbed, floating, sub-coriaceous, elliptic-lanceolate, stalked; nuts . . . . ?—Anglesea.
P. 7. E. S.-3.

* Leaves all submersed

† and opposite; stipules 0.

7. P. *densus.* Leaves clasping, lanceolate, or ovate-acuminate; spikes shortly stalked, at length reflexed.
P. 6. 14.

† Leaves alternate.

‡ Stip. adnate to petiole, so as to form a sheath at base.

1. P. *pectinátus.* Leaves linear, setaceous, 1-ribbed; spikes interrupted; nuts roundish-obovate, rounded on back, with 2 lateral ridges.—Surrey.
P. 7. 17.

β. *filiformis.* leaves 1-ribbed; nut without ridges or keels.

γ. *zosteráceus.* leaves obscurely 3-ribbed; nut keeled when dry.

‡ Stipules free.

§ Leaves linear; stem flattened,

‖ with 3 principal ribs, and numerous, close, parallel, transverse ones.

9. P. *zosteræfólius.* Spikes 10-15-fl'd, cylindrical, on long ped.; nuts obovate, keeled; style terminal.—Yorkshire. Forfar.
P. 6. E. S.-2.

10. P. *acutifólius.* Spikes 4-6-fl'd, ovate, equalling the ped.; nuts reniform, acutely keeled; style continuous with the inner edge.—Sussex.
P. 6. E.-1.

‖ Leaves 3-5-ribbed, with a few obscure, connecting ones.

11. P. *gramíneus.* Spikes ovate, dense, continuous, about equal to the short ped.; nut obovate, keeled.
P. 6, 7. E.-9.

12. P. *pusillus.* Spikes not interrupted, much shorter than ped.; nut obliquely elliptical, obtusely keeled.
P. 6. 17.

β. *compréssus.* leaves broader, 5-ribbed; spikes interrupted.

§ Leaves lanceolate, or broader.

‖ Leaves stalked, elliptic-lanceolate, denticulate, mucronate, with many opposite pairs of parallel, secondary ribs, connected by reticulations; spikes cylindrical, many-fl'd.

13. P. *lúcens.* 16.
P. 6.

‖ Leaves sessile, or nearly so, pellucid,

¶ and serrulated; ped. cylindrical; nuts keeled when dry.

14. P. *crispus.* Stem compressed; leaves linear-oblong, obtuse, wavy; nuts beaked.
P. 6. 20.

β. *serrátum.* leaves plane, serrulate.

15. P. *perfoliátus.* Stem round; leaves cordate-ovate, clasping, serrulate, plane;
P. 7. 18. nuts not beaked.
¶ Leaves entire.
16. P. *prælóngus.* Ped. elongated, cylindrical, many-fl'd; leaves oblong, ob-
P. 6. E. S.-2. tuse, clasping, hooded at end; stip. not winged.
17. P. *longifólius.* Ped. elongated, clavate; leaves elongate, lanceolate, apicu-
P. 8. E. I.-1. late, attenuated at base, not hooded at end; stip. winged.
—Rydal Water, Westmoreland. Lough Corrib, Galway.

4. RU'PPIA. *L.*

Fl's 2, perfect, on a spadix, in the sheathing bases of the leaves. Perianth 0. Anth. 2, the cells widely separated, on short, scale-like fil. Carpels 4, 1-seeded.

1. R. *maritima.* Leaves linear, with large, inflated sheaths; anth. large,
P. 7, 8. C. sessile, with 1 oblong cell bursting transversely.—Salt marshes.
2. R. *rostelláta.* Leaves filiform, with small, close sheaths; anth. sessile,
P. 7, 8. 9. the cells nearly round.—Salt marshes.

5. ZANNICHE'LLIA. *L.* Horned pond-weed.

Fl's solitary, monœcious, in a spathe. *Barren fl's* :—Stam. 1, naked. *Fertile fl's* :—pistils 2-6, in a campanulate perianth, each 1-seeded, stalked in fruit; pollen globose.

1. Z. *palústris.* Stem filiform; leaves opposite, linear; fl. sessile, axillary,
P. 7, 8. 16. in a membranous bract; stigma entire.—Stagnant water.
β. *pedunculáta.* cluster of fruit stalked.
γ. *dentáta.* stigma notched.

6. ZOSTE'RA. *L.* Grass-wrack.

Fl's mon-or diœcious, arranged as sessile, naked anth., in 2 rows within a linear, leafy spathe. Pistils single, simple, 1-seeded, with a cleft style. Pollen filamentous, confervoid.

1. Z. *marina.* Leaves obscurely 3-ribbed, sheathing, and enclosing the
P. 8, 9. 10. fl's at base; stem slightly compressed.—Salt water.

Cryptogamous or Flowerless Plants.

PLANTS destitute of both calyx and corolla, and without either stamens or pistils.

ACROGENS.

FLOWERLESS plants, having a distinct axis of growth, furnished with leaves; the stem, when much developed, increasing in length merely, by the extension of the growing point at its summit.

ORDER XCIX.—FILICEÆ.

Leafy, perennial plants, often rhizomatous, composed of vascular as well as cellular tissue, possessing mucilaginous, astringent, or aromatic properties. *Fructification of one kind*, consisting *of capsules*, or seed-covers, which, under the microscope, may be generally seen to be *furnished each with an articulated, elastic ring.* These capsules are spiked, or generally collected into clusters of various shapes,—*sori*,—mostly *on the back or margin of the frond* or leaf, naked or covered by a membrane called the indusium. Seeds or sporules minute.

- * Capsules spiked or clustered at the apex, on a separate branch of the frond, without an articulated elastic ring.
  - † Stem hard, woody, solid. . . . . 16. OSMUNDA.
  - † Stem succulent, hollow, dividing into a frond and spike.
    - Capsules in a single spike. . . . . 18. OPHIOGLOSSUM.
    - Capsules in a compound spike. . . . 17. BOTRYCHIUM.
- * Capsules neither spiked, clustered at the apex, nor on a separate branch of the frond, having an articulated, elastic ring.
  - † Caps. seated on the margin of the frond, attached in indusia.
    - Rib of indusium prolonged in an exserted awn. . 14. TRICHOMANES.
    - Rib not longer than the indusium. . . . 15. HYMENOPHYLLUM.
  - † Caps. seated on the back of the frond, not in indusia.
    - ‡ Back of frond covered with brown scales concealing the sori. . . . . } 1. CETERACH.
    - ‡ Back of frond not covered with brown scales,
      - § without an indusium. . . . 2. POLYPODIUM.
      - § With an indusium,
        - ‖ distinct from the margin of the frond.
          - ¶ Sori elongate.
            - each sorus seated on 2 separate, distinct ribs. . . . } 9. SCOLOPENDRIUM.
            - each sorus not so seated.
              - Sori parallel to, and close to midrib. . . . } 12. BLECHIUM.
              - Sori not parallel to midrib.
                - Sori straight. . 7. ASPLENIUM.
                - Sori crescentic. . 8. ATHYRUM.

¶ Sori not elongate, circular, or nearly so.
Indusium inferior; margin cleft into many, often capillary segments, } 3. WOODSIA.
Indusium superior.
orbicular, peltate, . . 4. ASPIDIUM.
reniform, fixed at the sinus, . 5. LASTREA.
ovate, cucullate. . . 6. CYSTOPTERIS.
‖ Indusium not distinct from margin of the frond.
¶ Sori continuously marginal. . . 10. PTERIS.
¶ Sori not continuously marginal.
Margins of fertile pinnæ longitudinally reflexed. . . . } 11. CRYPTOGRAMMA.
Margins of fertile pinnæ not longitudinally reflexed. . . } 13. ADIANTUM.

Tr. I. *POLYPODIDÆ. Capsules dorsal or marginal, with an elastic ring, opening transversely and irregularly.*

1. CE'TERACH. *Willd.* Ceterach.

Sori oblong or linear, straight, scattered, covered, as well as the whole of the back of the frond, with chaffy scales. Indusium obsolete.

C. *officinárum.* 4-10. (3-6.) (*a*) 7. Frond pinnatifid or pinnate; segments ovate, obtuse, alternate.—Rocks and walls.

2. POLYPODIUM. *L.* Polypody.

Sori circular. Indusium absent.

* Stipes 3-branched, deep green.
† Frond and rachis pubescent.
1. P. *calcáreum.* 7. (6-8.) E. 3. Branches bi-pinnate, erect, rather rigid; segments obtuse, somewhat crenated; sori crowded, marginal, and finally confluent; stipes 6-8 inches high.—Stony places.
† Frond and rachis not pubescent.
2. P. *Dryópteris.* 7. (6-8.) 9. Fronds bi-pinnate, spreading, deflexed; segments obtuse, subcrenated.—Shady, mountainous places.
* Stipes not 3-branched.
† The 2 lower pinnæ deflexed; ribs hirsute.
3. P. *Phegópteris.* 7-9. (6-10.) 7. Fronds triangular, bi-pinnatifid; segments linear-lanceolate, obtuse, ciliated; sori marginal.—Shady, rocky places.
† The 2 lower pinnæ not deflexed; ribs smooth.
4. P. *vulgáre.* 8-10. (6-12.) 20. Fronds pinnatifid or pinnate; segments linear-lanceolate, obtuse, more or less serrated.—Rocks and walls.
β. *cámbricum.* pinnæ interruptedly pinnatifid.
γ. *serrátum.* pinnæ serrated, deeply serrated or crenated.

3. WOO'DSIA. *Br.* Woodsia.

Sori circular, scattered, having an indusium beneath, which is divided at the edge into many (often capillary) segments.

(*a*) The figures in the brackets indicate the length of the frond in inches.

W. *[illegible]*. Fronds lanceolate: pinnæ separate, pinnatifid. — Falcon
7. 4-4. E. 2. [illegible] Durham. Clova.
β. *[illegible]*. pinnæ oblong, with more shallow lobes.—Glyder Fawr.
γ. *[illegible]*. S. pinnæ ovate-cordate, deeply crenate.—Ben Lawers.

4. ASPIDIUM. *Sw.* Shield-fern.

Sori circular, scattered. Indusium orbicular, peltate.

* Fronds pinnate.
1. A. *lonchitis*. Fronds linear-lanceolate: pinnæ lanceolate-falcate, ciliate-
7. 4-12. 3. serrate: lower ones auricled.—Northern alpine rocks.
* Fronds bi-pinnate.
† Pinnæ nearly straight, oblong-lanceolate, or broadly lanceolate.
2. A. *aculeatum*. Pinnules ovate, sublunate, acuminate or aristate, auricled
7. 12-24. 15. at base on the upper side; the one next the main rachis larger than the rest, the margin serrated and spinulose: stipes and rachis very chaffy.—Woods and hedge-banks.
β. *lobatum*. fronds narrower: pinnules decurrent, convex; auricle not so apparent, having a distinct tooth at the base, bearing a strong spine: ribs hairy beneath.
γ. *lonchitoides*. pinnæ more or less combined, more flexible: nearly allied to the former species.
+ Pinnules thin, membranous, plane, distinctly petioled.
3. A. *angulare*. Fronds broadly lanceolate: pinnules ovate, sublunate, ob-
7. 12-24. 15. tuse, aristate, distinctly auricled at base; lower ones often deeply pinnatifid: stipes and rachis very chaffy. light green: fronds more or less curved.—Woods and hedge-banks.

5. LASTRE'A. *Presl.* Shield-fern.

Sori circular, scattered. Indusium orbicular-reniform, attached at the marginal notch.

* Fronds pinnate. Sori not seated close to mid-rib;
† Pinnæ lanceolate, or linear-lanceolate. Sori at length, confluent.
‡ The 2 or 3 pairs of lower pinnæ very short, nearly triangular; sori marginal.
1. L. *oreópteris*. Pinnæ lanceolate, pinnatifid, not convolute, glandulous;
7, 8. (20-40.) 17. segments lanceolate, obtuse, when drawn through the hand, emitting a strong odour.—Mountainous places.
‡ The 2 or 3 pairs of lower pinnæ not short, lanceolate.
2. L. *Thelýpteris*. Pinnæ linear-lanceolate, convolute; segments ovate, entire;
7, 8. (6-20.) ? rachis pubescent, light green.—Marshy places, Killarney.
† All the pinnæ cordate-attenuate, deeply pinnatifid, acutely serrated. Sori large.
3. L. *cristáta*. Frond erect, stipes long; pinnæ distant; segments oblong,
8. (20-40.) E.-5. ovate, obtuse.—Boggy heaths.
* Fronds bi-pinnate.
† Segments toothed, either not spinulose, or fronds having the sori large, prominent, seated close to mid-rib; indusium persistent.

‡ Lower pinnæ gradually diminished.

4. L. *Filix-Mas.* Pinnules oblong, rounded, sometimes combined at base,
6, 7. (30-40.) 20. serrated; stipes very chaffy.—Woods and shady banks.

‡ Lower pinnæ not gradually diminished; pinnules somewhat stalked.

5. L. *rigída.* Fronds lanceolate; pinnules crowded, nearly pinnatifid;
7, 8. (12-24.) E. 1. indusium fringed, odorous, glaucous.—Canal, Lancashire.

† Segments toothed, spinulose; frond sub-tripinnate; sides of frond nearly parallel, often linear, erect; stipes long.

‡ Scales on stem uniformly coloured; indusium not glandulous.

6. L. *spinósa.* Fronds plane; segments convolute.—Marshy places, not un-
7 8, (40-50.) ? common in Ireland.

‡ Scales on stem ovate-lanceolate; indusium glandulous; frond generally triangular.

7. L. *dilatáta.* Pinnules oblong, distinct, dark green.—Moist woods,
7, 8. (40-50.) 17. abundant.

β. *recúrva.* lowest pinnæ large; seg. curved in an opposite direction to pinnæ.

γ. *concáva.* frond shorter, concave, as also every pinna and pinnule.

δ. ? frond of a light green colour, much broader and spreading.

6. CISTO'PTERIS. *Bern.* Bladder-fern.

Sori circular. Indusium inserted by its cucullate base at the underside of the sorus, opening by a lengthened, fringed, free extremity, which points towards the apex of the frond.

* Fronds tri-pinnate, pinnatifid,

† triangular.

1. C. *montána.* The lower pinnæ, pinnules, and segments larger; first pair
7. (6-8.) S. 1. of pinnæ opposite.—Found on Ben Lawers, Scotland.

† Frond lanceolate, not triangular; pinnæ triangular, finely divided.

2. C. *alpína.* Pinnæ confluent, smooth, bright green.—Walls, Layton,
7. (4-10.) E. 1. Essex.

* Fronds bi-pinnate.

3. C. *fragilis.* Pinnæ ovate-lanceolate, deeply pinnatifid; rachis winged.—
7. (3-12.) 11. Rocks and walls.

β. *augustáta.* pinnæ oblong-ovate, or linear, never rounded or ovate; of a more pliant texture than *fragilis.*

γ. *dentáta.* segments rounded, pointless.—Ben More.

7. ASPLE'NIUM. *L.* Spleen-wort.

Sori linear. Indusium linear, its attachment straight, opening on one side longitudinally towards mid-rib.

* Fronds apparently without a mid-rib; the petioles gradually expanding into pinnæ or pinnules.

1. A. *septentrionále.* Fronds simply partite; segments linear, acutely toothed
6-10. (2-4.) E. S. 1. at the extremity.—Rocks, Arthur's seat, Edinburgh.

2. A. *Ruta-muraria.* Fronds bi-pinnate, obovate-cuneate, crenate; pinnæ mostly
5-10. (3-5.) 20. alternate; indusium jagged; rachis nearly black; lobes dark green.—Walls and rocks.

β. *alternifolium.* fronds pinnate; pinnæ alternate, cuneate, toothed.

* Mid-rib apparent.

† Fronds pinnate.

‡ Rachis distinctly winged.

3. A. *marinum.* Fronds oblong-linear; pinnæ obtuse, serrate; superior base
6-10. (3-9.) 9. slightly auricled.—Rocks on sea-coast.

‡ Rachis not winged,

4. A. *Trichómanes.* black, fronds linear; pinnæ sub-rotund, obtuse, stalked,
5-10. (3-6.) 19. crenate; ribs forked below sori, dark green.—Rocks.

5. A. *viride.* Rachis green, fronds linear; pinnæ roundish-deltoid, cre-
6-10. (4-6.) 4. nate; ribs forked above sori, light green.—Moist rocks.

† Fronds bi-pinnate,

‡ first pair of pinnæ longest; sori elongate, central.

6. A. *Adiántum nígrum.* Fronds triangular, tri-pinnate below; pinnæ triangular,
6-9. (6-8.) 20. alternate; pinnules inciso-serrate; stipes winged, purplish black, dark green.—Banks and fissures of rocks.

‡ First pair of pinnæ not longest; sori short, nearly marginal.

7. A. *lanceolátum.* Frond lanceolate; pinnæ and pinnules obovate, sharply
9. (3-6.) E.-1. toothed at apex; rachis green, bright green.—On high rocks near Tunbrige Wells.

8. ATHY'RIUM. *D. C.* Athyrium.

Sori oblong, reniform. Indusium crescent-shaped, opening towards mid-rib, free, its margin cut into capillary segments.

* Pinnæ and pinnules decurrent.

1. ATH. *mólle.* Frond ovate-lanceolate, bi-pinnate; lower pair of pinnæ
6, 7. (18-36.) short, deltoid, deflexed; pinnules flat, toothed, bright green.—Bogs.

* Pinnæ not decurrent.

† Pinnules not convolute; stem swollen at base.

2. ATH. *Filix-fœ'mina.* Fronds lanceolate, bi-pinnate; pinnules linear-oblong, dis-
6, 7. (12-48.) 19. tinct, deeply serrated, or pinnatifid.—Moist places.

β. *vivipara.* the extremities of all the pinnæ tasseled.

† Pinnules convolute, linear, narrow.

3. ATH. *rhœ'ticum.* Fronds linear, bi-pinnate; pinnæ and pinnules distant;
E. 1. margins notched, yellowish green.—Trevenna, Cornwall.

9. SCOLOPE'NDRIUM. *Sm.* Hart's-tongue.

Sori linear, transverse, on lateral ribs. Indusium double, occupying both sides of the sorus, opening, as it were, by a longitudinal suture.

S. *vulgáre.* Fronds simple, oblong-ligulate, with a cordate base.—
7, 8. (12-24.) 19. Shady banks.

10. PTE'RIS. *L.* Brake.

Sori continuous, linear, marginal. Indusium formed of the reflexed margin of the frond.

P. *aquilina.* Fronds tri-partite; branches bi-pinnate; pinnules pin-
7. (12-60.) 20. natifid below; segments oblong, obtuse.—Woods and heaths.

11. CRYPTOGRA'MMA. *Br.* Rock-brake.

Sori at length confluent and marginal. Indusium formed by the revolute margins of the pinnules.

C. *crispa.* Fronds triangular; pinnæ and pinnules alternate; fertile
7. (6-12.) 3. fronds bi-pinnate, tri-pinnate below; pinnules linear-oblong, or rather obtuse, entire, slender, very brittle, bright green.—Stony places in mountainous countries.

12. BLE'CHIUM. *L.* Hard-fern.

Sori linear, longitudinal, contiguous, parallel on each side of the mid-rib. Indusium continuous, opening interiorly.

B. *boréale.* Sterile fronds pinnatifid; segments lanceolate, rather obtuse;
7. (8-16.) 20. fertile fronds pinnate; pinnæ linear, acuminate.—Woods and heaths.

13. ADIA'NTUM. *L.* Maiden-hair.

Sori oblong or roundish. Indusium membranaceous, arising from the reflexed portions of the margin of the frond.

A. *Capillus Véneris.* Frond bi-pinnate; pinnæ alternate; pinnules thin, leafy,
5-9. (6-12.) 1. obovate-cuneate, alternate, on black, capillary petioles; sterile pinnules sharply serrated; light green.—Fissures in damp rocks.

14. TRICHO'MANES. *L.* Bristle-fern.

Sori marginal. Capsules upon an elongated receptacle, within a cylindrical or suburceolate, monophyllous indusium, of the same texture as the frond, opening above.

T. *speciosum.* Fronds tri-pinnatifid; lobes linear, entire, or bifid; in-
10. (4-8.) I—1. volucres solitary, in axils of upper seg., dark green, glabrous.—Wet rocks. Turk Waterfall, Killarney.

β. *Andréwsii.* fronds lanceolate; stipes long; receptacle 5 or 6 times longer than the involucre.—Gouin Carach, Kerry.

15. HYMENOPHY'LLUM. *Sm.* Filmy-fern.

Sori marginal. Capsules upon a narrow receptacle, within a 2-valved indusium, which is of the same texture as the frond, opening above.

* Pinnæ not recurved; involucre orbicular, compressed, spinulose serrate, light green.

1. H. *Tunbridgénse.* Fronds pinnate; pinnæ distichous, vertical; seg. linear;
7. (1-3.) 10.? rachis broadly winged; not rare.—Damp, shady rocks.

* Pinnæ recurved; involucre ovate, inflated, entire, dark green.

2. H. *Wilsoni.* Fronds pinnate; segments linear, when in fruit the leafy
7. (1-3.) 10.? expansions turn in one direction, the fruit in the opposite; not rare.—Damp, shady rocks.

Tr. II. *OSMUNDIDÆ. Capsules spiked or clustered, regularly 2-valved, without a ring.*

16. OSMU'NDA. *L.* Flowering-fern.

Capsules sub-globose, pedicellated, clustered, striated, half 2-valved. Indusium none.

O. *regĭlis.* Fronds bi-pinnate; pinnules oblong, nearly entire and ses-
7-9. (30-70.) 14. sile; lower ones slightly auricled.—Watery meadows, near lakes.

17. BOTRY'CHIUM. *Sw.* Moon-wort.

Capsules sub-globose, sessile, clustered at the margin, on one side of a pinnated rachis, 1-celled, 2-valved, compressed, opening transversely. Indusium none.

B. *Lunária.* Frond pinnate, solitary; lobes fan-shaped, crenate; cap-
7. (2-6.) 16. sules smooth, dull, yellowish green.—Pastures.

18. OPHIOGLO'SSUM. *L.* Adder's-tongue.

Capsules 1-celled, 2-valved, opening transversely, connate, forming a compact, 2-ranked spike. Indusium none.

O. *vulgátum.* Spike cauline; frond entire, ovate, obtuse; capsules smooth.
6. (4-8.) 18. —Moist pastures.

ORDER C.—MARSILIEÆ.

Stemless creeping or floating plants, with erect leaves, having a circinate vernation. *Fructification of two kinds*, enclosed *in a capsule-like invol., with 3 or 4 cells;* the *one* clustered and stalked, or crowded confusedly without stalks; the other simple, oval bodies, with a terminal nipple, whence germination proceeds.

Invol's. 1-celled in the base of the leaves. . . .	1. ISOETES.
Invol's. 4-celled, axillary.	2. PILULARIA.

1. ISOE'TES. *L.* Quill-wort.

Invol's. not opening, formed by the swollen base of the leaves, 1-celled. Sporules inserted upon many filiform receptacles.

1. J. *lacústris.* Leaves subulate, bluntly 4-angular, of 4 longitudinal, in-
P. 2. ternally jointed tubes; rhizome blunt, tuberous.—Bottoms of Mountain lakes.

β. filiformis. densely tufted, with erect, slender leaves.

2. PILULA'RIA. *L.* Pill-wort.

Invol's opening, solitary, nearly sessile, globose, coriaceous, 4-celled, each cell containing 2 kinds of bodies,—granules, or membranes containing muricate grains.

P. *globulifera.* Rhizome elongated, entangled; leaves very slender, erect,
P. 12. bearing the nearly sessile, hairy invol's. in their axillæ.
—Margins of lakes.

ORDER CI.—LYCPODIEÆ.

Moss-like plants, with creeping stems, and imbricated leaves, or stemless, with erect, subulate leaves, possessing highly irritant and cathartic properties. *Fructification of* 1-3-*celled, axillary, sessile, spore cases,* either bursting in distinct valves, or indehiscent, *some including a fine powder, others reproductive granules.*

1. LYCOPO'DIUM. *L.* Club-moss.

Caps. 1-celled; some 2-valved, including a fine powder; others 3-valved, containing 1-4 granules.

* Leaves scattered irregularly.

† Spikes 2 or 3 together, stalked,

1· L. *clavátum.* cylindrical, with ovate-triangular, eroso-dentate scales;
P. 7, 8. 15. leaves scattered, incurved, hair-pointed; branches ascending.—Mountain heaths.

† Spikes solitary, terminal, sessile,

2. L. *annotínum.* oblong-cylindrical; scales roundish, with an attenuated
P. 8. E. S.-1. point; leaves lanceolate, mucronate, serrulate; caps. all with powder.—Mountains.

3. L. *inundátum.* Spikes with leafy scales; leaves linear, acute, curving up-
P. 8, 9. 10. wards; caps. all with powder.—Moist heaths.

4. L. *selaginoídes.* Spikes leafy, on short, erect branches; leaves lanceolate,
P. 8. 9. ciliated; some caps. with powder, some with granules.—Mountain bogs.

* Leaves arranged in 4 or 8 rows along the stem.

5. L. *alpínum.* Leaves in 4 rows, oblong, convex, acute, keeled, entire;
P. 8. 7. spikes sessile, terminal, solitary, short, cylindrical, with ovate-lanceolate, flat scales.—High mountains.

6. L. *Selágo.* Leaves in 8 rows, crowded, linear-lanceolate, acuminate;
P. 6-8. 14. caps. not in spikes, but in the axillæ of the common leaves.—Mountain heaths.

ADDENDA.

SPECIES LATELY DISCOVERED IN BRITAIN, NOT INCLUDED IN THE FOREGOING.

ORDER I.—ASTEREÆ.

Carduus setosus (*Beib.*) not the plant before described, which is *Cirsium setosum* (*D. C.*). It is mentioned by Mr. Babington as a variety of *Carduus arvensis*, differing in its lanceolate, flat, entire, or slightly lobed leaves.—Culross, Scotland.

Carduus oleraceus (*Vill.*), *Cirsium*, (*Alb.*), *Cnicus* (*L.*). Leaves not decurrent, cordate, clasping, spinosely-ciliated, glabrous, pinnatifid below, ovate, acute at the summit, the floral ones surrounding and overtopping the sub-sessile, sub-aggregate heads; bracts of invol. linear-lanceolate, almost unarmed.—Isle of Wight, Lincolnshire.

Filago apiculata (*G. E. Smith*). Stem. flexuose; leaves spathulate, all apiculate, pale-green, smelling like tansey; heads of 10-20 fl's scattered on the branches; bracts purple, with a strong, spinous point; seeds with few elevations.—Borders of fields, near Doncaster.

Achillæa tanacetifolia (*All.*). Stem-leaves with an oblong outline, bi-pinnatifid, woolly, or nearly glabrous; rachis winged, serrate; pinnæ, pinnules, and teeth of the rachis inciso-serrate; corymb dense; rays about ½ as long as invol. (Bab.).—Near Sheffield. Cromford Moor, Derbyshire.

ORDER XIX.—ROSEÆ.

Agrimonia odorata (*Ait.*). Cal. of fruit campanulate, furrowed on the upper half; outer spines reflexed; leaves interruptedly pinnate, hairy, with minute glands beneath (Bab.).—Beaumont, Jersey.

ORDER LIV.—OROBANCHEÆ.

Orobanche amathystea (*Thuil.*). Sep. bifid, many-nerved; cor. tubular, curved immediately from the base, and subsequently straight; lips unequally toothed, undulate, with branching veins; upper lip hooded, emarginate, with a curved border; stam. inserted near the base of cor., glabrous externally, but hairy at the base within; stigma with 2 divaricating lobes.—On *Daucus maritimus*; White-sand Bay, Cornwall.

ORDER LXXXV.—IRIDEÆ.

SISYRINCHIUM. *Tourn.*

Spathe 2-leaved. Pet. 6-cleft, superior; segments nearly equal, patent. Stigmas 3, filiform, involute. Fil. connate below. Caps. 3-celled, 3-valved.

1. S. *Anceps.* Stem broad, flat, winged; ov. glabrous; spathe about 4-fl'd; segments of perianth emarginate, mucronate.—Woodford, near Galway.

Most unlikely to be a native, though its appearance in the above locality cannot be accounted for satisfactorily.

ORDER CXII.—GRAMINEÆ.

LEERSIA. *Sol.*

Spikelets flat, compressed, 1-fl'd. Paleæ 2, compressed, keeled, awnless; lower much broader.

1. L. *oryzoides.* Panicle patent, with wavy branches, but mostly enclosed in uppermost sheath of leaves; spikelets 3, ½-oval; invol. ciliated; glumes 0.—Near Henfield, Sussex.

INDEX.

[*The figures prefixed to the specific names correspond with those in the body of the work. The Synonyms are printed in italics. Where the Generic name is followed by a word of three letters, the Genus thus commencing is referred to for corresponding Synonyms. The figures after the names of species indicate the volume and plate in Sowerby's English Botany. In some cases, other illustrations are referred to, as R. Reichenbach's Icones. Plant., and Icones. Fl. German, or others more fully named.*]

THE END.